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TWENTY-FIRST BIENNIAL REPORT

OF THE

Oregon State Highway Commission

1953-1954

W. C. WILLIAMS

TWENTY-FIRST BIENNIAL REPORT

OF THE

Oregon State Highway Commission

For the Period July 1, 1952, to June 30, 1954

OREGON DEPARTMENT OF
TRANSPORTATION LIBRARY

OREGON STATE HIGHWAY COMMISSION

BEN R. CHANDLER, Chairman
CHAS. H. REYNOLDS, Commissioner
M. K. McIVER, Commissioner

R. H. BALDOCK, State Highway Engineer
C. W. ENFIELD, Chief Counsel
H. B. GLAISYER, Secretary

OREGON STATE HIGHWAY COMMISSION

Former Members and Terms

E. J. Adams, Eugene, February 28, 1917, to March 31, 1918.
W. L. Thompson, Pendleton, February 28, 1917, to Oct. 15, 1919.
S. Benson, Portland, February 28, 1917, to November 15, 1920.
R. A. Booth, Eugene, April 1, 1918, to May 28, 1923.
J. N. Burgess, Pendleton, Oct. 16, 1919, to Nov. 21, 1919.
E. E. Kiddle, Island City, November 26, 1919, to Dec. 28, 1920.
J. B. Yeon, Portland, November 22, 1920, to March 31, 1923.
W. B. Barratt, Heppner, January 8, 1921, to March 27, 1923.
Wm. Duby, Baker, March 27, 1923, to July 31, 1927.
H. B. Van Duzer, Portland, April 1, 1923, to October 7, 1931.
W. H. Malone, Corvallis, May 28, 1923, to March 31, 1927.
C. E. Gates, Medford, April 1, 1927, to March 11, 1931.
Robert W. Sawyer, Bend, August 1, 1927, to May 28, 1930.
M. A. Lynch, Redmond, May 29, 1930, to August 1, 1931.
Chas. K. Spaulding, Salem, March 11, 1931, to February 16, 1932.
Wm. Hanley, Burns, August 1, 1931, to February 16, 1932.
J. C. Ainsworth, Portland, October 8, 1931, to February 16, 1932.
Leslie M. Scott, Portland, February 17, 1932, to March 31, 1935.
Carl G. Washburne, Eugene, Feb. 17, 1932, to October 9, 1935.
E. B. Aldrich, Pendleton, February 17, 1932, to March 31, 1940.
F. L. Tou Velle, Jacksonville, October 9, 1935, to March 31, 1939.
Henry F. Cabell, Portland, April 1, 1935, to February 28, 1943.
Huron W. Clough, Canyonville, April 1, 1939, to April 7, 1943.
Herman Oliver, John Day, April 1, 1940, to March 31, 1943.
Merle R. Chessman, Astoria, April 8, 1943, to October 1, 1946.
T. H. Banfield, Portland, February 28, 1943, to March 31, 1950.
Arthur W. Schaupp, Klamath Falls, Apr. 1, 1943, to Mar. 31, 1949.

Present Members

Ben R. Chandler, Coos Bay, appointed October 1, 1946.
Chas. H. Reynolds, La Grande, appointed April 1, 1949.
M. K. McIver, Portland, appointed April 1, 1950.

Completed U. S. 30 water grade route easterly from Hood River. (Western Ways Photo.)

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LETTER OF TRANSMITTAL

Salem, Oregon

January 1, 1955

HONORABLE PAUL L. PATTERSON,

Governor of the State of Oregon.

Dear Sir:

In compliance with the provisions of ORS 366.485, we have the honor of presenting to you the report of the Oregon State Highway Commission for the period from July 1, 1952, to June 30, 1954.

Respectfully yours,

OREGON STATE HIGHWAY COMMISSION,

BEN R. CHANDLER, Chairman,

CHAS. H. REYNOLDS, Commissioner,

M. K. McIVER, Commissioner.

BIENNIAL REPORT

OF THE

Oregon State Highway Commission

Fiscal Years 1953 and 1954

Section One

GENERAL COMMENTS

In the paragraphs which follow, the State Highway Commission takes opportunity to comment on the below listed important features of its activities during the biennial period 1953-1954:

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Five-year Primary Highway Construction Program

In 1951, following an action by the Legislature authorizing the issuance of bonds in the amount of $40,000,000, the Highway Commission outlined a program of primary highway improvement which it called its Five-year Primary Highway Program. This program, which is separate from and additional to the program of work on Federal-aid secondary highways, both state and county, on which $6,000,000 is expended annually, included $40,000,000 of work to be financed with the proceeds of the $40,000,000 bond issue, $41,650,000 to be financed with Federal-aid and state match money, and $35,000,000 to be financed with additional bond funds, if and when additional bond funds were made available. The total of the program was $116,650,000. Work on it began in the summer of 1951 and by the end of that year $11,590,000 was under contract and $1,130,-000 expended.

In 1953, the Legislature authorized an additional bond issue in the amount of $32,000,000. Following this action, the Commission revised and expanded the Five-year Program to a total of $124,000,000 to be financed $72,000,000 with the proceeds of bond sales and $52,000,000 with Federal-aid and state match money. Subsequently, and as work progressed, the program has been revised and augmented until now it totals $125,000,000.

The program includes projects in all counties except Crook, Lake, Morrow and Wallowa. Outstanding among the projects included are the following:

Cascade Locks to The Dalles
T. H. Banfield Expressway
Portland-Salem Expressway
Eugene to Roseburg
Roseburg to Canyonville
Gold Hill to Ashland
Reedsport to North Bend
Port Orford to Gold Beach
Bend to Diamond Lake Junction

As of June 30, 1954, $80,200,000 of the program was under contract and the value of work performed and paid for was $51,460,000. Contracting of the remaining $44,800,000 is scheduled $24,600,000 in the fiscal year 1955, $9,600,000 in the fiscal year 1956, and $10,600,000 in the fiscal year 1957. Construction is planned for completion in 1958.

The program as it now stands contemplates expenditures on the various primary highways as follows:

		Miles of Construction	Allotment
US-99	Pacific	198	$ 47,298,000
US-30	Columbia River and Old Oregon Trail	152	33,661,000
US-101	Oregon Coast	64	15,896,000
US-97	The Dalles-California	122	6,934,000
US-20	Newport-Cairo	159	6,243,000
US-26	Seaside-Vale	92	3,083,000
US-126	McKenzie	----	1,310,000
US-199	Redwood	19	1,507,000
US-395	Pendleton-John Day	----	450,000
Oregon-6	Wilson River	14	2,205,000
Oregon-8	Tualatin Valley	13	1,200,000
Oregon-18	Salmon River	12	613,000
Oregon-22	Willamina-Salem	4	365,000
Oregon-36	Siuslaw	6	1,260,000
Oregon-38	Umpqua	2	320,000
Oregon-42	Coos Bay-Roseburg	13	719,000
Oregon-66	Klamath Falls-Lakeview	----	555,000
Oregon-213	Cascade	3	480,000
	Junction City-Eugene	----	700,000
		873	$124,799,000

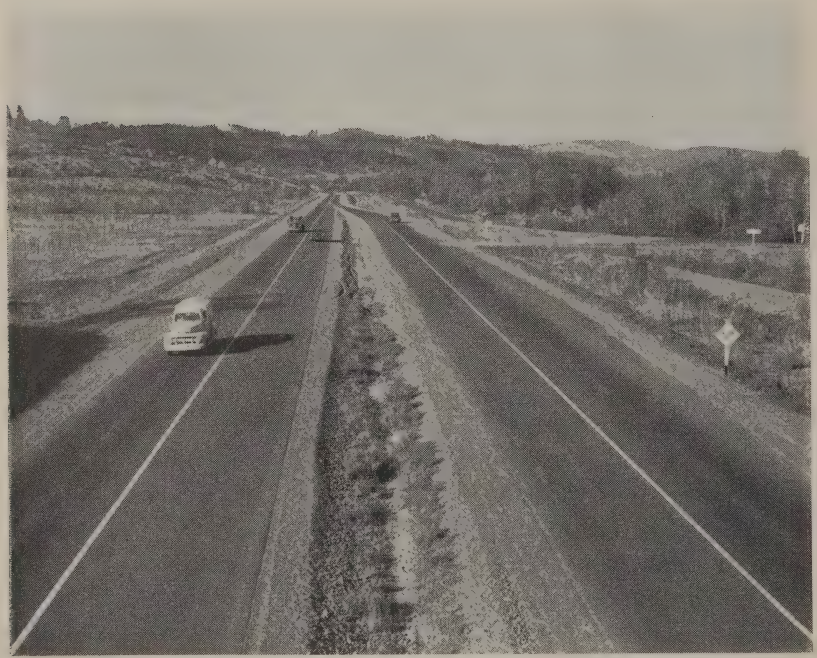
The allotment amounts here given are the allotments for construction cost only. They do not include amounts expended or to be expended for rights of way, which amounts will total approximately $20,000,000.

Projects on US-99 include 145 miles of complete relocation with full control of access and complete separation of grades. Four-lane construction extends continuously from Portland to Salem (35 miles) and three and four-lane construction is provided on ascending grades elsewhere. Alignment, grade and sight distance is everywhere of most modern standard.

Construction on the T. H. Banfield Expressway is of the multiple-lane type. Access is to be fully controlled. Like other expressways with fully controlled access, this expressway is comparable in all respects with the finest of the toll roads built and being built in the east and middlewest.

All other projects in the program are of high standard construction and, in major part, have limited access control.

This program, made possible by the bond authorizations granted by the Legislature in 1951 and 1953, by the revenues of increased road-user imposts and by increases in Federal-aid, has gone far in bringing the State's highways to the state of improvement which traffic warrants and the economy of the State demands. It has overcome the more serious and more urgent of the deficiencies which developed during the war period and the period of rapid traffic expansion which followed the war. However, there still remain deficiencies and need for



New Pacific Highway in the Vicinity of Chenowith Park, Douglas County.

relocation, reconstruction and improvement to fully restore and reestablish the portions of the highway system which this program has not been broad enough to include and to keep future highway betterment in pace with the needs of growing traffic. With the present day depreciated value of currency, present revenues and present Federal-aid are inadequate. Highways are still wearing out faster than they can be replaced. Some means must be found to provide additional construction funds.

Bond Program (Included in Five-year Program)

A highway construction program known as the "Bond Program" was developed by the Highway Commission early in 1951, following authorization by the Legislature of a $40,000,000 bond issue for the improvement of primary highways. This bond program was a part of the Commission's Five-year Program described hereinbefore and was in two parts; one part comprising projects to be financed with the authorized $40,000,000 bond issue and the other, in the amount of $35,000,000, to be financed with additional bonds, if and when authorized.

When, in 1953, the Legislature took action in the matter of additional bonds by authorizing $32,000,000, it was necessary to reduce the Bond Program from a total of $75,000,000 to a total of $72,000,000. In doing so, the Commission endeavored to distribute the reduction among the highways so that the percentage share of each highway would remain substantially the same as in the original program. In the resultant program, the amounts allotted to the several highways were as follows:

US-99	Pacific	$32,132,000
US-30	Columbia River and Old Oregon Trail	15,855,000
US-101	Oregon Coast	12,613,000
US-97	The Dalles-California	4,331,000
US-20	Newport-Cairo	2,650,000
US-26	Seaside-Vale	1,222,000
Oregon-6	Wilson River	1,605,000
Oregon-36	Siuslaw	850,000
		$71,258,000

Bonds were sold as follows:

Date of Issue	Amount	Interest Rate	Date of Final Principal Pay't.	Net Proceeds	Effective Interest Rate
Oct. 1, 1951	$15,000,000	1¼% to 1½%	Oct. 1, 1971	$14,769,083.33	1.6152000%
Mar. 1, 1952	15,000,000	1¼% to 1¾%	Mar. 1, 1972	14,836,604.17	1.6347610%
Mar. 1, 1953	10,000,000	1% to 2%	Mar. 1, 1973	9,873,046.53	1.9928095%
Sept. 1, 1953	32,000,000	1½% to 2¼%	Sept. 1, 1966	31,565,162.22	2.3202280%
Totals	$72,000,000			$71,043,896.25	
Interest to be received on balances (estimated)				956,103.75	
Net total of proceeds				$72,000,000.00	

Contracting and Expending Schedule

Year	Amount Contracted	Amount Expended
1951	$11,590,000	$ 1,130,000
1952	18,875,000	12,258,000
1953	23,410,000	18,582,000
1954	13,820,000	21,000,000
1955	4,305,000	16,000,000
1956	----------	3,030,000
	$72,000,000	$72,000,000

Schedule of Principal and Interest Payments

Calendar Year	Principal Payment	Interest Payment	Total Payment	Bonds Outstanding at End of Year
1951	$ ----------	$ ----------	$ ----------	$15,000,000.00
1952	750,000.00	318,750.00	1,068,750.00	29,250,000.00
1953	1,500,000.00	502,812.50	2,002,812.50	69,750,000.00
1954	4,000,000.00	1,220,937.50	5,220,937.50	65,750,000.00
1955	4,000,000.00	1,165,312.50	5,165,312.50	61,750,000.00
1956	4,000,000.00	1,102,812.50	5,102,812.50	57,750,000.00
1957	4,000,000.00	1,040,312.50	5,040,312.50	53,750,000.00
1958	4,000,000.00	972,812.50	4,972,812.50	49,750,000.00
1959	4,000,000.00	904,375.00	4,904,375.00	45,750,000.00
1960	4,000,000.00	835,000.00	4,835,000.00	41,750,000.00
1961	5,000,000.00	763,750.00	5,763,750.00	36,750,000.00
1962	5,000,000.00	672,500.00	5,672,500.00	31,750,000.00
1963	5,000,000.00	581,250.00	5,581,250.00	26,750,000.00
1964	5,000,000.00	482,500.00	5,482,500.00	21,750,000.00
1965	5,000,000.00	383,750.00	5,383,750.00	16,750,000.00
1966	5,000,000.00	285,000.00	5,285,000.00	11,750,000.00
1967	2,000,000.00	186,250.00	2,186,250.00	9,750,000.00
1968	2,000,000.00	154,375.00	2,154,375.00	7,750,000.00
1969	2,000,000.00	121,875.00	2,121,875.00	5,750,000.00
1970	2,000,000.00	89,375.00	2,089,375.00	3,750,000.00
1971	2,000,000.00	55,937.50	2,055,937.50	1,750,000.00
1972	1,250,000.00	21,562.50	1,271,562.50	500,000.00
1973	500,000.00	5,000.00	505,000.00	
	$72,000,000.00	$11,866,250.00	$83,866,250.00	

The bond moneys are being devoted solely to costs of construction. Rights of way cost in connection with bond projects will amount to approximately $13,000,000. That cost will be paid from current highway revenues.

As of June 30, 1954, $60,898,000 of bond projects were completed or under contract. The whole of the program will be contracted by June 30, 1955.

Secondary Highway Program

During the period that the State's Primary Highways are being improved under the Five-year Program, there is being expended in the improvement of the State's Secondary Highways approximately $17,000,000. During the same period, improvements in like amount are being made on county roads included in the Federal-aid Secondary Highway System. The costs of this work are being shared by the State, the counties and the Federal Government as follows:

Contributing Agency	Improvements on State Secondary Highways	Improvements on County Roads In FAS System
State	$ 7,500,000	$ 3,750,000
Counties	----------	3,750,000
Federal Government	10,000,000	10,000,000
	$17,500,000	$17,500,000

Federal-aid for Fiscal Years 1956 and 1957

By an act designated "The Federal-aid Highway Act of 1954", passed by Congress in May, 1954, Federal-aid for highways was authorized in the amount of $875,000,000 for each of the two Federal fiscal years 1956 and 1957. Oregon will share in these Federal funds in the amount of $12,889,469 per year.

This $12,889,469 allotment represents an increase of $4,227,658, or 49 per cent, over the allotment of the preceding year. Under normal conditions, this amount of Federal-aid would require matching with state money in the amount of $8,000,000 and, if the state money were available, would finance $20,900,000 of construction. However, in states which are using bond money to advance highway improvement, Federal-aid funds can be used in the payment of bond principal in the same manner that

it can be used in highway construction. Under this arrangement, Oregon plans to use $3,000,000 of its 1956 Federal-aid and $3,000,000 of its 1957 Federal-aid in the payment of bond principal. When this is done, the Federal-aid remaining available for construction in each of the two years is $9,650,000 and this, when matched with $6,270,000 of state funds, will finance an annual construction program of $15,820,000. There are not sufficient state funds now available to match all available Federal-aid funds and at the same time care for the state debt service on road bonds.

The distribution of each year's program of Federal-aid construction is as follows:

Projects on Federal Interstate Routes	$ 1,860,000
Projects on Federal Primary Routes	6,340,000
Projects on Federal Urban Routes	1,420,000
Projects on Federal Secondary Routes on State Highways	3,100,000
Projects on Federal Secondary Routes on County Roads	3,100,000
Total for each year	$15,820,000

The first three of the above amounts, totalling $9,620,000, are available for primary highways and will be used to finance a part of the Commission's Five-year Program. The remaining $6,200,000 will be used $3,100,000 on secondary state highways and $3,100,000 on county roads.

Under agreement between the Highway Commission and the county officials in the matter of financing Federal-aid work on county roads, the state will bear the expense of making surveys and preparing plans, the counties will acquire at their expense the rights of way required, and the forty per cent of match money required will be provided one-half by the state and one-half by the counties. Thus the county participation in the cost of Federal-aid secondary highway projects on county roads will be twenty per cent of the construction cost plus one hundred per cent of the right of way cost.

The $3,100,000 of Federal-aid secondary highway work on county roads will be divided among thirty-six counties of the

state, twenty-five per cent in equal amount to each county, sixty per cent in proportion to rural population and fifteen per cent in proportion to county road mileage.

Extent of Oregon's Highway Construction Program

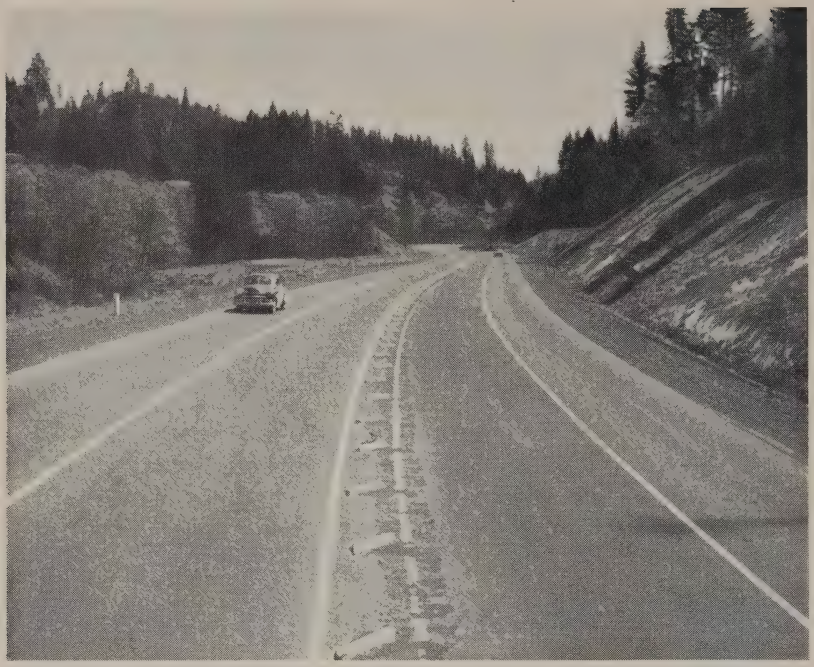
The extent of Oregon's highway construction program is indicated by the following tabulation:

	Calendar Year Amounts			
	1953	1954 (Estimated)	1955 (Estimated)	1956 (Estimated)
Contracts Awarded or to be Awarded				
Bond Projects	$23,410,000	$13,820,000	$ 4,305,000	$
Federal-Aid Projects	12,825,000	16,700,000	15,820,000	16,820,000
Other Projects	1,520,000	2,380,000	1,780,000	1,650,000
Totals	$37,755,000	$32,900,000	$21,905,000	$18,470,000
Amounts Disbursed or to be Disbursed on Construction Projects				
Bond Projects	$18,582,628	$21,000,000	$16,000,000	$ 3,030,000
Federal-Aid Projects	13,017,305	11,000,000	19,200,000	16,300,000
Other Projects	1,586,544	2,100,000	1,650,000	1,650,000
Totals	$33,186,477	$34,100,000	$36,850,000	$20,980,000
Amounts Disbursed or to be Disbursed for Rights of Way				
Projects of all classes	$ 3,898,395	$ 6,250,000	$ 4,400,000	$ 3,000,000

Amounts disbursed on construction projects, as shown in the above table are inclusive of amounts disbursed on Federal-aid projects on county roads, which amounts range from $2,400,000 in 1953 to $3,100,000 in 1956.

A New Pacific Highway

Construction is in progress on a new Pacific Highway. This new highway is to extend from Portland to the Oregon-California State line south of Ashland and is to traverse, in general, the same part of the State as does the existing Pacific Highway and will pass near to and will serve all of the same cities and communities. For the most part, however, it is to be on entirely new right of way, with entirely new alignment and entirely new pavement, and all will eventually be built to expressway standards.



The new Pacific Highway between Divide and Anlauf, Douglas County, has several miles of 4-lane construction.

This new highway is being constructed to standards comparable with those used in the highly publicized toll roads recently constructed in some of the eastern and midwestern states. Alignment, lane width, grades and sight distance are to be all that can be desired. All crossings of railways, highways, roads and streets are to be separated. There are to be no lefthand turns involving crossings through lanes of opposing traffic. There are to be no stops, and best of all there are to be no toll stations.

Portions between Portland and Salem are to be of four-lane construction. From Salem, south, two-lane construction will prevail for the time being, with a third lane being provided on ascending grades to facilitate the passing of slow moving vehicles and with four lanes over the summits.

To permit the optimum in the free flow of traffic and in safety, access to and from the highway will be permitted at

relatively few points, and where permitted will be made through conveniently arranged, channelized and grade separated traffic interchanges. There will be no access to the highway from abutting properties, either commercial or private. All cities and towns other than Portland are to be by-passed, but all are to be made conveniently accessible by well designed road connections.

Construction of nearly half of the new highway is provided for in the Highway Commission's Five-year Program and will be ready for traffic by the end of 1957. Construction of the remaining portions will necessarily extend over a period of years, final completion being dependent upon the availability of funds. On these remaining sections, the presently used highways are mostly of sufficiently good standard to enable them to give fairly adequate service while completion of the new work is awaited. The portions of the highway for which provision is made in the Five-year Program, together with their lengths, their costs and their expected dates of completion, are as follows:

Section	Length (Miles)	Estimated Cost	Expected Date of Completion
Barbur Blvd., 5 miles south of Portland to 7 miles south of Salem	47	$14,300,000	Fall, 1955
Eugene to Myrtle Creek	78	22,200,000	Fall, 1956
Myrtle Creek to Canyonville	9	3,100,000	Fall, 1957
Gold Hill to Central Point	9	1,800,000	November, 1954
	143	$41,400,000	

Between Central Point and Ashland the existing highway has been widened to four-lane width under the Five-year Program to more adequately provide for the heavy traffic in that area until construction on the ultimate location can be undertaken.

The building of the first half of this fine highway was made possible by the action of the Legislature in authorizing the issuance of bonds. The building of the second half is contingent upon future action of the Congress and the State Legislature in providing road funds.

Progress in the Modernization of Highway US-30

Among the miracles that are being worked by the bond program and the Five-year Program of which the bond program is a part, is the rebuilding of several portions of Highway US-30, the rebuilding of which had for years seemed hopeless because of the heavy cost involved. The portions being rebuilt have a total length of 150 miles and their cost will run to about $33,500,000.

New Columbia River Highway looking west from Mosier, Wasco County.

Foremost among the portions or sections involved is that between Cascade Locks and The Dalles. This section traverses a most rugged part of the Columbia River Gorge for a distance of 40 miles and its construction was made the more difficult by the presence of a railroad built at the river's edge and occupying most, and in many places all, of the narrow ledge between the river and the gorge wall. Construction of a highway of

modern standards in this location was indeed an engineering feat, having required a great amount of excavation in rock, the moving of the railroad at many points and the building of much of the roadbed within the river itself at depths up to 100 feet.

The whole of this 40 mile section is of water grade; alignment is free of sharp curves; clear sight distance is all that can be desired; minimum pavement width is 24 feet and the pavement is bordered on each side by 10 feet of smooth oiled rock shoulder. Access to the highway is permitted only at widely separated intervals and such of the accesses as will carry more than small volumes of traffic are channelized and grade separated for safe travel.

In combination with the previously completed reconstruction of like standards between Troutdale and Cascade Locks and with the T. H. Banfield Expressway now being constructed between Portland's Burnside Street Bridge and Troutdale, this new section provides a fully modernized highway over the whole of the 82 miles between Portland and The Dalles.

Construction of the T. H. Banfield Expressway, of which mention has been made, is another highly important project in the Five-year Program. It extends from the Burnside Street Bridge in Portland east to Troutdale, a distance of 14 miles. It is to be a 4 to 6 lane highway with fully controlled access and complete separation of grades. Its cost is estimated at $16,000,000 with $6,000,000 of that amount being required in the purchase of rights of way. The portion of the project which is between 42nd Avenue and Troutdale, 13.4 miles, will be completed and opened to traffic by mid-summer 1955. Completion of the remaining 2.65 miles is scheduled for 1957.

On the Lower Columbia leg of Highway US-30, the Five-year Program will take care of a 3.87 mile section between Gnat Creek and Wauna in Clatsop County, a 7.12 mile section between Clatskanie and Delena in Columbia County and a 7.36 mile section between Goble and St. Helens, also in Columbia County. These three sections are being built at a cost of $3,770,000.

Junction of U. S. 30 and State 74 at Heppner Junction, Morrow County.

Between Arlington and Heppner Junction, a section 11.34 miles in length has been built at a cost of $1,745,000. This joins with prior high standard construction extending from Heppner Junction all the way to Pendleton, giving continuous completed highway for a distance of 73 miles.

East of Pendleton, a 15 mile section of new highway is being constructed to replace the old Emigrant Hill road with its hairpin turns and slow moving traffic. This improvement will shorten the distance some 2.5 miles. Between La Grande and North Powder, a distance of 24 miles, the highway has been relocated via Ladd Canyon with resultant improved alignment and a distance saving of 6.2 miles. In Malheur County, between Olds Ferry and Ontario, a section 18.5 miles in length is being built to effect a saving of 7 miles in distance and to eliminate much curvature.

On completion of the improvements described, 300 of the 490 miles in US-30 will be of high standard construction and the mileage of low standard and deficient road will have been cut down to a point where there is hope for correction within the not too distant future.

Road-user Imposts and Their Distribution

Road users in Oregon are presently paying in road-user imposts (motor vehicle license fees, gasoline tax, motor transportation fees and fines) approximately $54,300,000, annually. Of this amount $3,100,000 is used to defray collection and administration expenses incurred under the supervision of the Secretary of State and the Public Utilities Commissioner. Of the remaining $51,200,000, $14,800,000 is turned over to counties and cities for use by them on county roads and city streets, and $1,600,000 is expended by the State Police in the enforcement of traffic laws and in other highway patrol duties. There remains, then, some $34,800,000 for use by the State Highway Commission.

The $34,800,000 available to the Highway Commission is utilized roughly as follows:

Maintenance of highways	$11,700,000
Operational expense, including park operation	2,900,000
Administration	2,000,000
Buildings, park improvements and equipment	850,000
Bond principal and interest	5,470,000
Surveys and property acquisition expense	1,000,000
Rights of way, quarries, etc.	3,200,000
Minor betterments on highways	800,000
State expenditures on Federal-aid projects on county roads	630,000
Construction work on state highways	6,250,000
	$34,800,000

The rather small part ($6,250,000) of its current revenues (road-user imposts) which the Commission is able to devote to construction work is supplemented by federal aid in the amount of $10,970,000, thus bringing to $17,220,000 the amount that is annually available for construction work on state highways.

President Eisenhower's Proposal for Greatly Enlarged Program of Highway Improvement

An important development of past months is the President's recognition of the nationwide need of highway improvement and his proposal that there be undertaken immediately a ten-year fifty-billion dollar program of highway modernization and betterment. Recent studies indicate that the needs may increase the demands of the Federal-aid system to seventy-five billion dollars and thus increase the time for the performance of the work.

This proposal has met with wide public approval and there is every reason to believe that from it will come a plan and a program which will bring into being the system of improved roads and highways which the nation has long needed and which will be commensurate with transportation needs.

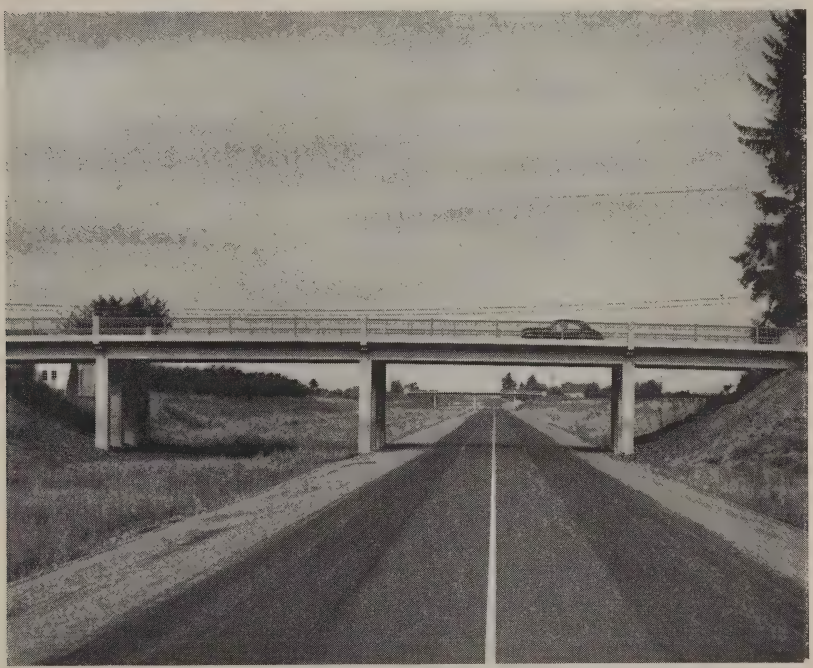
To further the President's proposal, the Association of State Governors has appointed a committee from among its members, which committee is making a study of the problems involved and will soon formulate and recommend a practical plan.

Preliminary proposals for the financing of this great program, lean toward the financing of a major part by Federal borrowing, obligating therein the income from the Federal tax of two cents per gallon on gasoline for the ten or fifteen years that construction will be in progress and for ten to twenty years after construction is completed. Under these preliminary proposals, the states would be called upon to participate to the extent of one-third or one-half of the total cost. It is expected that this program, depending upon the plan used, would in most states require an appreciable increase, perhaps an average of twice as much, in the amounts presently being devoted to highway construction.

In view of the fact that the preliminary proposal described would obligate the Federal gasoline tax for a rather long period of time after construction is completed, it may in the end place upon the states an even larger share of the burden than is indicated.

Need for Increase in Highway Revenues

While much of the immediate need for reconstruction and betterment on the State Highway system is being temporarily relieved by the $72,000,000 bond program, sight must not be lost of the fact that the issuance of bonds to be retired by the current revenues of subsequent years does not, when figured over a period of years, increase the income for highway purposes or reduce the ultimate needs total. If revenues are inadequate before bonds are issued, they remain inadequate after the issue. The bond issue eliminates some of the need for construction but it substitutes for that need, the need for income to retire the bonds and to meet bond interest payments. It does, however, give the people the use of improved roads quickly which brings substantial monetary benefits to the road users and encourages the growth of the economy of the entire state.



Center Street Crossing of Salem By-pass looking north toward "D" Street structure.

Oregon's issuance of $72,000,000 of bonds is proving to have been a most forward-looking and rewarding step, satisfying, as it has, many very urgent needs which could not have been satisfied otherwise for many years. It has deferred for a time a large and very definite obligation, but it has not relieved the state of ultimately meeting that obligation.

Estimates of the construction needs of the State Highway system for the 15-year period following completion of the bond program now in progress, set $470,000,000 as the minimum for those needs. The average per year for that period is $31,000,000.

Estimates of the amounts annually available to apply on those needs, including Federal-aid funds, Federal Forest highway funds and road-user revenues, at present rates, set the average of the available amount at $23,000,000.

The difference of $8,000,000 between the $31,000,000 of annual needs and the $23,000,000 of funds available annually, represents the extent to which current income for state highways is inadequate. It is about the equivalent of the state's share of a 2-cent per gallon tax on gasoline.

In the event the President's proposal for an enlarged highway modernization program in a shorter period time materializes, such program, as explained in a preceding section hereof, will require heavy participation by the states and, in the opinion of the Commission, Oregon should not anticipate that it can meet its share in this enlarged program with a revenue increase less than $8,000,000 per year.

Commission's Recommendation in Regard to Increasing Highway Revenues

Believing that the progress of the State of Oregon will be retarded unless the state follows-up on the advantage gained through its $72,000,000 bond program by keeping apace with the needs and demands of its highway system, and feeling that the taxpayers of the state can well afford and will be well repaid by such action, the Highway Commission recommends to the Governor and to the Legislature that arrangements be made whereby the annual income for State Highway purposes will be increased by approximately $8,000,000.

As explained in a preceding article, $8,000,000 is the additional amount required annually for the next 15 years to meet the needs that are arising and will continue to arise as traffic volumes increase and as the older sections of the highway system reach the point where betterment, reconstruction or complete replacement are required. It is believed that this amount will be required even though the enlarged nationwide modernization program proposed by President Eisenhower should materialize, as any increased expenditure of Federal funds within the state will be offset by the program being confined to a fewer number of years and thus requiring higher annual contributions by the State.

As the source for the $8,000,000 of increased revenue recommended, the Commission recommends a 2 cents per gallon increase in the gasoline tax. A 2-cent increase will yield a net total of about $11,280,000, but of that amount 19 per cent or about $2,150,000 would go to the counties and 10 per cent or about $1,130,000 to the cities, leaving the required $8,000,000 for the state. The additional amounts accruing to the counties and cities can be used to very good advantage in the improvement of county roads and city streets.

The opinion that an increase in highway revenues at this time is to be expected and is entirely in line with changing conditions as substantiated by the following items:

1. The number of motor vehicles being served by state highways has increased from 431,945 in 1941 to 754,815 in 1953, an increase of 74 per cent.

2. Inflation and other factors have, during the period 1941 to 1953, increased the unit costs of the various items of roadwork materially.

3. The increase in annual revenue from road-user imposts during the period 1941 to 1953 was 183 per cent, but the increase in the state highway share of this revenue was but 131 per cent.

4. During the period 1941 to 1953, the amount paid by road-users (including truck owners) in motor vehicle taxes of all kinds, increased 57 per cent. This is considerably below the cost of living increase of approximately 100 per cent. With a 2-cent increase in the gasoline tax, the increase in total tax per vehicle, 1953 as compared with 1941 would be 89 per cent.

5. Only by reason the fact that Federal funds have been made available for aid in the payment of bond maturities, is the state able to match and take up its share of Federal-aid funds.

6. If Federal-aid is materially increased, as now appears probable, the state will be unable, under present rates of revenue and state participation, to provide its quota of match money.

State Parks

The Oregon State Parks are operated under the direction of the Oregon State Highway Commission. To the performance of this duty the Commission gives a great deal of time and attention.

During the past year the Commission has greatly increased the facilities in State Parks. The splendid response of the people of Oregon to these increases has been most gratifying, indicating the desire and need of the continuation of the development program.

During the last quarter of a century, the Commission has acquired, either by purchase or gift, 55,036 acres forming 156 individual parks. The program of acquisition is continuing as new and desirable areas are found and needed. The Commission has been foremost in this phase of the work in comparison with other states.

A prominent legislator of an eastern state, a recent visitor of the parks was full of praise for the Oregon system of state park operation and stated that he would recommend a similar setup to the legislature of his state.

Some of the more important features of the Oregon State Parks program during the past several years included expansion of overnight camping facilities and an increase in the planning phase of general park development. Over 100,000 visitor nights will be spent in Oregon State Camps in 1954 as compared with 63,319 in the preceding year. The construction of additional overnight camps to take care of such increases presents many planning problems. The questions of location, cost, size and

type of development are pertinent to the establishment of state parks which will fulfill a public need, and make the best possible use of funds available for such expenditures.

Chenowith Park Road Undercrossing on relocation of Pacific Highway in Douglas County.

In many cases it is necessary to analyze future public use requirements of certain existing state parks in order to justify additional acquisitions. This is accomplished by examining the individual park areas as to the possibilities of the required expansion in relation to the public need. If it is found that present facilities do not lend themselves to such use, the situation is provided for by additions or by entirely new park development.

A continuing feature of the state park program that has been carried forward is the maintaining of a schedule of park facility construction which has been designed to keep in step with individual park attendance increases. An estimated one-

half million more persons used Oregon State Parks in 1954 than in 1953, indicating the ample justification for the construction of additional facilities each year.

Although there are a number of factors which have contributed to the growth in attendance in the past several years, undoubtedly one of the more important has been the increased use of Oregon's greatly improved highway system as a result of the State Highway Commission's Five-year Construction Program begun in 1951. Oregon State Parks from the very beginning have been very closely allied with its State highways. Major highway improvements, such as have taken place in recent years, increase travel use and make state parks more accessible to a larger number of people by shortening the distance to such areas in both mileage and travel time. It is apparent that estimates which forecast eventual highway construction needs will receive consideration in park planning for future requirements.

It is through continuance of this program of adequate planning resulting in park development to fit the public's needs, that it is believed the best interests of the general public can be served.

Access Control and Grade Separation

Recognizing the futility of attempting to develop high capacity highways on rights of way to which the adjoining property owners have free access, as exemplified by the now congested Barbur Boulevard and McLaughlin Boulevard sections of Highways 99W and 99E, the Highway Commission, in making improvements on the more heavily traveled highways, is now exercising the authority given it by the Legislature to restrict and control access to the highway from adjoining properties and from intersecting roads. To further expedite and safeguard the traffic on such highways, cross traffic and left-hand turns at grade are being avoided and made unnecessary by the construction of grade separations at intersecting roads and by the construction of grade separated traffic interchanges at connections to those roads and streets to and from which access to the highway is permitted.

The degree of access restriction and control being exercised varies on different highways and on different sections of highways depending on the conditions involved. On some, the control is "full control," meaning that access is permitted at a few selected points only, that there is no direct access to the highway from abutting properties and that there are no crossings of roads, streets or traffic lanes at grade. On others the control is "partial." Under partial control, accesses are limited but there may be some accesses from abutting properties, some grade crossings and some accesses from roads and streets of minor importance.

Improvements in progress or being planned on the Pacific Highway are being made on a "full control of access" basis, except in a few places where improvement on ultimate location is not presently feasible. The Banfield Expressway is being built on a "full control of access" basis. Improvements on the

Shogren overcrossing of Union Pacific tracks on U. S. 30 east of Mosier, Wasco County.

OREGON DEPARTMENT OF TRANSPORTATION LIBRARY

Columbia River Highway and the Old Oregon Trail have been made on a "partial control of access" basis, although access on the portion between Portland and The Dalles is, for all practical purposes, fully controlled. The recently contracted project on US-30 between Olds Ferry and Ontario is on a "full control of access" basis and it is expected that future projects on this interstate highway will be with full control of access. On the Oregon Coast and The Dalles-California Highways, improvements presently in progress or being planned are on a partial control of access basis.

Fully controlled access arrangement is the safest type of highway facility that highway engineers can provide. It has been determined by the Bureau of Public Roads, based on a study of one thousand miles of roads and ten billion miles of travel, that rural highways with access controlled facilities have but one-third as many fatalities and but one-fourth as many accidents as do non-access-controlled roads. Access control also decreases materially the nervous strain of driving. Proper control of access is therefore a most important feature in highway design.

Portland-Vancouver Interstate Bridge over Columbia River

At the 1953 session of the Oregon Legislature, authority was given the State Highway Commission to cooperate with the State of Washington in the construction of an additional bridge across the Columbia River between Portland and Vancouver. This bridge will parallel the existing bridge and will serve to carry three lanes of southbound traffic. The existing bridge will be operated with three lanes carrying northbound traffic. This authority is given in Chapter 389 of Oregon Laws 1953. A companion measure was enacted by the Washington State Legislature at its 1953 session.

Negotiations were begun early in 1953 with the State of Washington, the United States Army Engineers, and with navigation interests operating on the Columbia River. A hearing before the District Engineer of the U. S. Engineers was held on November 19, 1953 followed by further conferences with navigation interests and a second hearing held on March 17,

1954. A permit for the additional bridge was granted by the Secretary of the Army on June 17, 1954.

An agreement has been entered into with the State of Washington setting forth the details of the construction and operation of the new bridge. Under this agreement, upon completion of the new structure, the two bridges will be operated as toll bridges until such time as the investment is amortized. The State of Oregon is to design and supervise the construction of the new bridge. The bridges will be operated by the Washington Toll Bridge Authority which is now organized and operating toll ferries and bridges in the State of Washington. When the investment is amortized, both the bridges will be operated as free bridges. The State of Oregon will maintain both structures and will be reimbursed by the State of Washington for one-half of the maintenance costs.

Design of the new structure is underway, and it is anticipated that the contract for construction will be let early in the summer of 1955.

Section Two

REPORT

OF THE

State Highway Engineer

TO THE

State Highway Commission

OF THE

STATE OF OREGON

1953-1954

R. H. BALDOCK, State Highway Engineer

Marion and Center Street Crossings of Willamette River on State Route 22 in Salem. (Western Ways Photo.)

LETTER OF TRANSMITTAL

Salem, Oregon
January 1, 1955

To the Honorable State Highway Commission,
Ben R. Chandler, Chairman,
Chas. H. Reynolds, Commissioner,
M. K. McIver, Commissioner.

Gentlemen:

I have the honor to submit to you herewith the report of the State Highway Engineer for the period July 1, 1952, to June 30, 1954.

Respectfully yours,

R. H. BALDOCK,
State Highway Engineer.

Section Two

REPORT OF THE
State Highway Engineer
TO THE
State Highway Commission
1953-1954

INTRODUCTION

In this section of the report are given, first, an outline of the progress made in highway improvement during the biennium; second, descriptions of the several classes and systems of the highways with which the Department has to deal; third, a discussion of the Department's finances, its sources of income, the amounts of its income and the amounts of its expenditures; and fourth, reports by some of the subdivisions of the department's organization on the activities of those subdivisions. The subjects mentioned will be found under subheads as follows:

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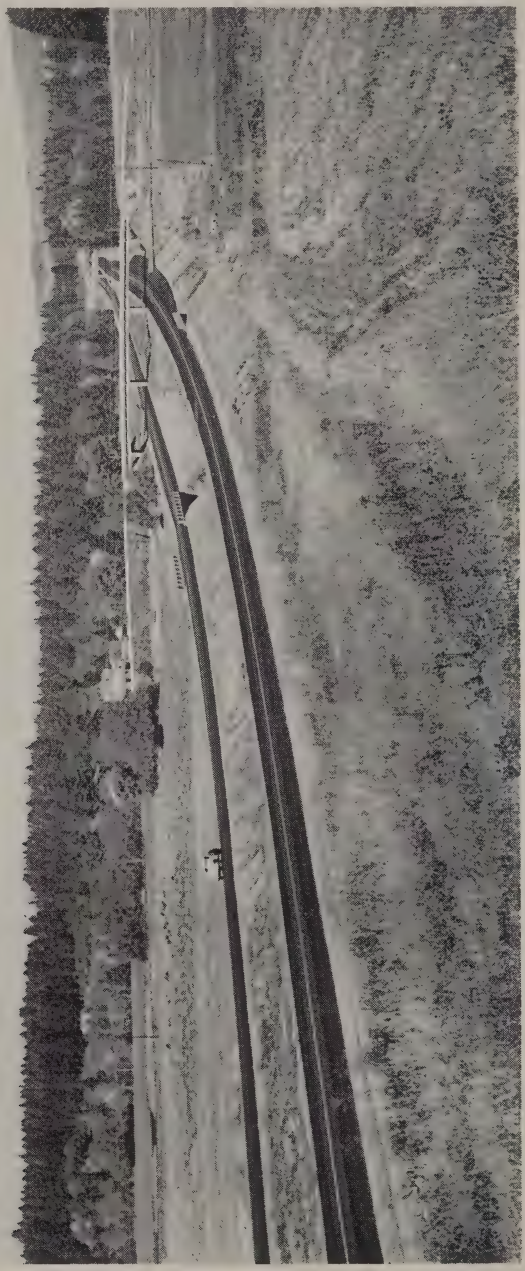


Looking north on the Portland-Salem Expressway at the Nyberg Road Undercrossing near Tualatin, Washington County.

PROGRESS IN HIGHWAY IMPROVEMENT

The impact of an expanding economy on the activities of the Highway Department during 1953 and 1954 has been tremendous. Not only has a normal increase in highway revenues and expenditures been experienced, but accelerated activities resulting from the legislative authorization and the subsequent sale of some $72,000,000 of highway bonds are combining to stimulate the reconstruction of Oregon's systems of highways to standards of service not dreamed possible some five years ago.

The responsibilities of the Highway Department have enlarged with the augmentation of funds expendable for highway improvement, and it reports herewith on the fulfillment to date of its trust with justifiable pride of accomplishment.

Planning for the future is an important part of efficient operation. Some years ago, this Department inventoried its highway structure, forecast the increasing service demands, estimated the needs and developed an orderly pattern of highway improvement based on sound engineering principles and regard for the policy of giving the greatest possible benefit to the greatest number of people.

Oregon's transportation problems cannot be solved in a matter of 2 or 3 years, nor can it be rightly expected that the $470,000,000 presently estimated as necessary for high standard improvement of the States' Highway Systems be appropriated and utilized in any period under 15 years.

During 1953 and 1954, a total of 342 road and bridge construction projects have been completed under the Highway Commission's supervision. These completed projects were distributed over 34 state primary highways, 32 state secondary highways, 51 county roads on the federal system of secondary highways and some 45 city street projects not on state highway routes but improved under a special legislative levy for such work. These projects were located in 35 of the state's 36 counties.

During the same 2-year period, 6 Federal Forest Road projects under the supervision of the U. S. Bureau of Public Roads were completed on the States' primary highway system. They involved work on 5 primary highways and comprised

23.60 miles of grading, 35.81 miles of rock base and surfacing, 16.85 miles of oiling, 23.60 miles of paving and 1 bridge.

The mileages of road construction and the number of bridges completed in 1953 and 1954 under the 342 projects supervised by the Highway Commission are as shown in accompanying Table I.

Table I

Mileage of Work Completed in 1953 and 1954

Classification of Work	Primary Highways (Miles)	Secondary Highways (Miles)	Other Roads and Streets (Miles)	Totals (Miles)
Bituminous Paving	344	89	36	469
Oil Mat Surfacing	214	70	156	440
Stone Surfacing	309	138	143	590
Grading	384	93	97	574
Totals of above (miles)	1,251	390	432	2,073
Bridges (number of)	154	14	11	179

As of December 31, 1954 the status of improvement of the two state highway systems which are under the jurisdiction of the State Highway Department is as given in accompanying Table II.

Table II

Status of Improvement of Highway Systems

Type of Improvement	Primary Highways (Miles)	Secondary Highways (Miles)
Concrete Pavement	272	43
Bituminous Pavement	1,053	343
Bituminous Macadam Surface	1,235	89
Oil Mat Surface	2,106	1,480
Rock or Gravel Surface	31	363
Graded Only	42	59
Unimproved	98	191
Totals	4,837	2,568

The status of improvement of each of the 59 state primary highways, of each of the 128 state secondary highways, and of roads and streets other than those on the two state highway systems is shown in detail in Tables 29 to 32, inclusive in Section Three of this report.

Comparing the mileage figures given above in Table I with similar statistics of the preceding biennium, it becomes apparent that the accelerated tempo of construction felt in 1951 and 1952 has continued with increasing velocity in 1953 and 1954. Using bituminous paving as illustrative of highway improvement, the 1949-50 period showed 93 miles of such construction, the 1951-52 period 369 miles, whereas there were 469 miles of this high-type construction completed in the 1953-54 period covered by this report.

Referring to Table II, it will be noted that there has been a net increase in the total mileages now included in each of the two state highway systems; 40 extra miles on the primary system and 37 extra miles on the secondary system. These net additional mileages consisted mainly of unimproved or gravel surfaced roads placed on the system because of the increasing demands for highway service always accompanying the economic expansion and development of the State.

The State Highway Department through expanded effort to meet the increasing demands of public service has considered it proper and in the public interest to expand the highway systems under its jurisdiction and to improve the roads so taken over to the status of all-weather service as rapidly as available funds will permit. Despite the increases of relatively unimproved roads added to the States' highway systems, it will be noted that the percentages of the total mileages of the systems which have been brought to the status of an oiled or higher type of surface have increased in 1954 to 96.46% for primary highways and 76.12% for secondary highways, with a percentage of 89.4% applicable to the combined mileage of both systems. These figures do not reflect the several hundred miles of highways which have been resurfaced, strengthened and widened without altering the mileage status of improvement.

Without question, the greatest improvement in the States' highway systems and the greatest contribution of service to the public who use and profit by them have resulted from the new construction, reconstruction and relocation projects on the Banfield Expressway, the Columbia River and Old Oregon Trail Highways, the two Pacific Highways, the Oregon Coast

Highway, the Central Oregon Highway, and The Dalles-California Highway.

A brief review of the major projects completed during 1953 and 1954, arranged by highways, is given below. This review is given to point out the locations and the nature of the highway improvements which have been made during that period.

Beginning of interchange at Junction U. S. 99E and Wilsonville Cut-off, Marion County.

Primary State Highways

Of the 59 primary state highways in the state, 34 have been improved during the biennium under 189 projects involving an expenditure of $68,398,680. Brief descriptions of the major projects, pointing out the nature of the highway improvement resulting therefrom, follow:

Pacific Highway West, U. S. 99W: Nine projects have been completed during the biennium on this highway which extends from the junction of Denver and Union Avenues north of Portland through McMinnville to Junction City.

One project involved the grading of connections between Swift Road and Denver and Union Avenues, north of Portland. The grading of these connections was completed in the biennium with construction of a grade separation structure and paving of the project now under contract. The project was designed to alleviate traffic congestion at this heavily travelled intersection.

Another project involved the improvement to 4-lane status of the portion of the highway from Tigard southerly to the crossing of the Tualatin River, a distance of 2.65 miles. Opposing traffic lanes, each 24 feet wide, were constructed with a depressed median strip normally 40 feet wide being seeded to grass. Portions of the existing highway, where grades and sight distances were proper and adequate, were utilized for the northbound traffic lanes with entire new construction on the southbound lanes. Cross overs between opposing traffic lanes were provided at county road intersections, and frontage roads were provided for service to local businesses with controlled accesses to the main highway.

Another project involved the improvement to 4-lane status of the portion of the highway between Lafayette and the crossing of the North Yamhill River, north of McMinnville. Opposing lanes on this section are separated by a 16-foot median strip with portions of the existing road being utilized for two of the traffic lanes. The railroad undercrossing structure at St. Joseph was lengthened to span the four lanes under another contract. This construction required the temporary relocation of the railroad tracks to permit the lengthening of the undercrossing structure.

Another project called for relocation of the Orr Corner Monmouth Section of this highway. The project extended from a point about 3 miles south of Rickreall to Monmouth. This section was built on a new location and eliminated several sharp curves and by-passed congested areas at the Oregon College of Education and the business district at Monmouth. The new highway is of two lane asphaltic concrete pavement construction with curbed sections in developed areas in Monmouth. Two reinforced concrete bridges on this project were

constructed under a separate contract. The new alignment of the highway effects a saving in distance of approximately ⅓ mile.

The North Corvallis section of the Pacific Highway West was relocated from a point 1.7 miles north of the north city limits of Corvallis to the intersection with Van Buren Street in Corvallis a distance of 2.69 miles. The relocated highway is two-lane asphaltic concrete pavement construction throughout most of its length, but at the south end splits into two 2-lane legs with the northbound leg connecting to Third Street and the southbound leg connecting to Fourth Street. The project eliminates two right angle turns in Corvallis and by-passes a heavily congested area in north Corvallis. A railroad overcrossing structure over the Southern Pacific tracks at the north city limits of Corvallis was constructed under a separate contract.

Another project involved the construction of a reinforced concrete bridge over the Long Tom River in Monroe and construction of new asphaltic concrete paved approaches to the structure. The new structure replaced the obsolete timber and steel bridge and the new alignment eliminated a hazardous curve at the approach to the old structure.

Expenditures during the biennium for construction work on the Pacific Highway West (U. S. 99W) amounted to $2,280,567.

Pacific Highway East, U. S. No. 99E: On this route, which extends from the Junction of Denver and Union Avenues north of Portland, southerly through Salem to Junction City, four construction projects have been completed during the biennium.

One project involved the construction of a bituminous paved frontage road between "A" Avenue and Ochoco Avenue north of Milwaukie to provide access to the new Oregon Liquor Control Commission warehouse. The project provided extra lanes on the main highway for turning movements, and speed change lanes for vehicular traffic serving the warehouse. The cost of this construction was shared by the Liquor Control Commission and Highway Commission in accordance with an agreement between the two Commissions.

The widening of the highway over the New Era and Aurora Hills north of Canby and Aurora respectively was undertaken to provide an additional 12-foot lane of asphaltic concrete pavement for trucks and other slow moving traffic on ascending grades. The lanes were designed to speed up the flow of northbound traffic.

Another project involved the resurfacing of Summer Street between Fairgrounds Road and Market Street in Salem. This construction was done to smoothen and strengthen the riding surface on the street which now carries the southbound highway traffic.

The highway between Harrisburg and Junction City was widened and resurfaced with asphaltic concrete pavement to a width of 24 feet with 8-foot shoulders on each side. Channelization of traffic at the intersection of Pacific Highway East with Pacific Highway West in Junction City was also provided to smooth out the flow of this junction.

Expenditures during the biennium for construction work completed on the Pacific Highway East amounted to $369,530.

Pacific Highway, U. S. No. 99: This highway extends from Junction City southerly to the California State Line south of Ashland. Thirty-eight construction projects have been completed on this highway during the biennium.

One project involved widening of the Prairie Road-Eugene Section of the highway to a four-lane status from a point about 9.5 miles south of Junction City to the north city limits of Eugene. At the time this section of highway was originally constructed, provisions were made for widening to four lanes which was done at this time. The highway now has four 11-foot traffic lanes separated by a 12-foot median strip and is flanked by 8-foot shoulders. Widening of the railroad overcrossing structure at the north city limits of Eugene was performed under another contract.

Between Goshen and Divide, the major relocation of the highway is now under construction. The grading on the Goshen-Coast Fork Willamette River Unit and construction of some of the grade separation structures and bridges on this section have been completed. The grading of the remaining portion of the project, construction of remaining bridges and surfacing

The Pacific Highway was widened on the Prairie Road-Eugene Section to provide four traffic lanes and 12-foot median strip.

and paving of the section is scheduled for completion during the next biennium. The new route lies to the east of the existing highway and will by-pass congested areas of Creswell and Cottage Grove and will provide frontage roads for local traffic with controlled accesses to the main highway.

Another section of the major relocations planned for this highway has been completed and opened to traffic during the biennium, the Divide-Anlauf Unit between a point near the Lane-Douglas County Line and a point near the Anlauf Railroad Station. The project was constructed normally to provide 4 lanes of asphaltic concrete pavement and was constructed approximately along the old highway alignment between Divide and Comstock and lying to the east of the old highway between Comstock and Anlauf. Six structures were built under separate contracts.

Another new section of this highway being constructed during the biennium is the section between Anlauf and the foot of Rice Hill, about 5 miles south of Yoncalla. The new highway location is from one to five miles east of the old highway and by-passes Drain and Yoncalla. The new construction is two, three and four lanes of asphaltic concrete pavement with the basic design being two-lane construction with provisions for expansion to a four-lane status in the future. The four-lane construction has been completed at traffic interchanges. The three-lane portions of the project provide for a lane for slow moving vehicles on ascending grades.

Additional work on the new Pacific Highway is being done from a point approximately 1.2 miles north of Oakland to a point about 2.3 miles north of Myrtle Creek. The relocated highway from a point 1.2 miles north of Oakland to Winchester has been graded; paved with asphaltic concrete and opened to traffic during the biennium. The new highway lies to the west of the old highway and is of two, three and four lane construction with provisions for widening to four lanes throughout the entire length of the section when such additional construction is deemed advisable. Grading work from Winchester to Shady is now completed and grading work is under way from Shady to Booth Ranch. Grading work from Booth Ranch to Myrtle Creek is now under contract. All of the work between Winchester and Myrtle Creek is scheduled for completion during the next biennium.

From a point about 2.4 miles south of Wolf Creek to a point about 10 miles north of Grants Pass the highway has been widened to provide for passing lanes for slow moving traffic on ascending grades. Construction involved the widening of the existing two-lane pavement to provide an extra 11-foot traffic lane for slow moving traffic.

The section of this highway from a point about 1.8 miles north of Gold Hill to a point near the junction of the Pacific Highway and the Crater Lake Highway north of Medford has been reconstructed and paved with asphaltic concrete pavement during the biennium. The northerly portion of this section, from Rock Point to Seven Oaks, was relocated with the new highway being located on the southwesterly side of the old

highway and by-passes Gold Hill. The new highway is, in general, of two-lane construction with an extra lane for slow moving traffic on ascending grades and with four lanes being constructed through traffic interchanges. Frontage roads provide for local traffic with controlled accesses to the main highway. From Seven Oaks to Medford, the existing highway was widened to four lanes with a normal paved roadbed width of 48 feet with concrete curbs and paved parking lanes provided for in Central Point.

Between Medford and Ashland the Pacific Highway was widened and resurfaced with asphaltic concrete to provide four lanes of traffic. In general the highway was widened to provide four 12-foot traffic lanes with concrete curbs and paved parking lanes constructed within the city limits of Medford. Speed change lanes and refuge lanes were provided at important road intersections throughout the projects.

About 14 miles south of Ashland on the Siskiyou grade, the Pacific Highway was relocated for about 0.86 mile to place the new roadbed on stable ground through an area which had been under a constant threat of rock slides and slippage. The new construction also provided for a third lane of pavement for slow moving vehicles ascending the grade.

Expenditures during the biennium for construction projects completed on the Pacific Highway during the biennium amounted to $13,587,925.

Columbia River Highway, U. S. Nos. 30 and 730. Twenty-nine projects were completed during 1953 and 1954 on this highway which extends from Astoria to the Washington State line, 21 miles northeast of Umatilla.

About 19 miles east of Astoria, a project between Gnat Creek and Bradley Park involving a major line change was completed during the biennium. This project replaced a section of crooked highway descending westerly from Bradley State Park at Clatsop Crest. The roadway was constructed mainly to a 3-lane width, the third lane being provided for slow moving traffic on ascending grades. Grading work was performed under one contract and paving work was performed under a subsequent contract.

About 3 miles of the highway west of Rainier and about a mile of the highway in Goble was reoiled during the biennium. This construction was done to smoothen the riding surface and reinforce the existing surfacing on these two sections of the highway.

Several units of the water grade route from a point about 6 miles east of Cascade Locks to a point about 1½ miles west of The Dalles have been completed to the status of asphaltic concrete paved travelways and opened to traffic during the biennium. On the Gorton Creek-Warren Creek Section, the highway was reconstructed close to the alignment of the old highway. This work involved very heavy grading in difficult terrain and involved the relocation of nearly two miles of the Union Pacific Railroad. Between Warren Creek and Viento the highway was relocated on the northerly side of the existing highway and involved the relocation of over a mile of the Union Pacific Railroad tracks. From Viento to Wygant Park the highway was paved, the grading and temporary surfacing on this unit having been completed during the previous biennium. From Wygant Park to Hood River, the new highway was constructed in general on the north side of the existing highway and involved the relocation of nearly two miles of the Union Pacific Railroad. On the section from Hood River to Mosier, the new highway was constructed north of the old highway and the highway embankment was constructed of materials dredged from the Columbia River. A new bridge was constructed over Hood River and grade separation structures were constructed at connections to Second Street in Hood River, to the interstate bridge at Hood River and to the old highway at Mosier. From Mosier to Rowena and from Rowena to Chenoweth Creek, west of The Dalles, the new highway was also constructed on a new alignment north of the old highway. Construction on these two units involved a railroad overcrossing structure at Shogren, a grade separation structure and a connection to the existing highway at Rowena, and a new bridge over Chenoweth Creek.

Construction of this section of highway, from Gorton Creek to Chenoweth Creek, was one of the most difficult location,

design and construction projects undertaken by the State Highway Department. The new highway between these points, 31½ miles in length, replaces 35½ miles of crooked, congested and obsolete highway. The new highway is of two-lane construction with frontage roads provided for local traffic and with controlled access to the main highway. The new highway is designed throughout its length to the latest design for primary highway construction.

Second Street undercrossing structure on Columbia River Highway looking east from Hood River.

Between Arlington and Heppner Junction, a distance of about 11½ miles, this highway was reconstructed on new alignment south of the old highway. The new highway is of two-lane design with an extra traffic lane for slow moving vehicles being provided where required. At the junction with the Heppner Highway traffic is channelized and a grade separation is provided for traffic flow from the new highway to the old highway and to the Heppner Highway. Also a railroad

overcrossing structure was constructed at Heppner Junction and a new bridge was constructed over China Creek in Arlington. The new route by-passed the old congested, circuitous route through Arlington, and provides a fast, safe highway between its termini.

From a point about 3.3 miles east of the junction with the Cold Springs Highway near Sand Station to the Washington State Line, the highway was reinforced with a new stone base and asphaltic concrete pavement for a distance of about 6½ miles. This work was done to smoothen the riding surface and strengthen the old surfacing.

Expenditures during the biennium for construction projects completed on the Columbia River Highway during the biennium amounted to $13,427,590.

Oswego Highway, Oregon No. 43: One project was completed on this highway during the biennium. This project involved the widening of 0.32 mile of the highway between the Oswego Creek and Leonard Street in the City of Oswego. The project involved the widening of the existing 18-foot pavement to a 40-foot wide pavement with 2-foot shoulders through this congested area.

Expenditures during the biennium for construction completed on the Oswego Highway amounted to $28,522.

The Dalles-California Highway, U. S. Nos. 197 and 97: Nine projects have been completed on this highway during the biennium.

One project consisted of reoiling a section of the highway from Dufur north a distance of about five miles. This work was done to smoothen and reinforce the existing surfacing.

Another project, between the Crooked River Bridge and Terrebonne, 3.62 miles in length, was relocated to lie generally on the east side of the old highway. The new highway was constructed to a 2-lane width and the new alignment eliminated two hazardous curves at the approach to the Crooked River Bridge besides several other curves in the old highway. The project also included a new railroad overcrossing structure over the Oregon Trunk Railroad.

From a point about four miles south of Bend to a point about eight miles north of Crescent, this highway was reconstructed for a distance of nearly 34 miles. The northerly 12 miles of this section was constructed under one contract called the north unit of the Bend-Lapine Section. This section involved major relocation of the highway, the major part of the section being located on the westerly side of the old highway. The design is of two-lane construction with an additional lane provided for slow moving traffic on ascending grades. The next unit, called the south unit of the Bend-Lapine Section, involved the relocation of the highway where alignment and grades did not conform to modern standards of design, and widening of the existing highway where alignment, grades and sight distances did conform to latest design standards. This section was also two-lane construction with four lanes with paved parking lanes and concrete curbs being constructed through the town of Lapine. From Lapine to the south end of this section the existing highway was widened to a 48-foot roadbed, reinforced with new base materials and repaved. This section of highway, nine miles in length, has no curvature throughout its length and the difference in its highest and lowest elevation is less than 100 feet. The shoulders of the highway were oiled throughout the 34 miles and a vivid color demarcation between the paved travelway and the oiled shoulders was obtained by use of red cinder aggregates in the pavement seal and black cinder aggregates in the shoulder seal.

From a point about a mile north of the intersection of this highway with a road leading to Kirk to a point just north of the Williamson River Bridge, a distance of 17 miles, this highway was resurfaced during the biennium. The work was done under two contracts and consisted of placing of three inches of asphaltic concrete pavement over the existing oil mat surface. This work was done to smoothen the riding surface and reinforce the surfacing which had become traffic grooved under a large volume of heavy truck traffic.

Another project completed during the biennium consisted of regrading existing slopes on a short section of the highway about ten miles north of Klamath Falls between Modoc Point

Reconstructed sections of The Dalles-California Highway, U. S. 97, south of Lapine, Klamath County.

and Barkley Springs. This work consisted of benching of existing slopes and construction of rubble masonry walls to control sloughing of talus rock and to prevent its rolling onto the highway.

Expenditures during the biennium for construction completed on The Dalles-California Highway amounted to $3,220,458.

John Day Highway, Oregon No. 19 and U. S. No. 26: This highway was reconstructed from Fields Creek, about 14½ miles east of Dayville, to John Day during the biennium. One project from Fields Creek to Mt. Vernon consisted mainly of widening the existing highway to a 36-foot roadbed with elimination of sharp curves being accomplished by realignment in several places throughout this section. On the section between Mt. Vernon and John Day some major relocations were made to improve alignment. New bridges were constructed over the John Day River east of Mt. Vernon and over Moon Creek west of Mt. Vernon. The new highway was of two-lane construction throughout with four-foot oiled shoulders being constructed on each side of the new asphaltic concrete travelway.

Another project included work on the main highway from the junction with the Austin Spur to a point about 4.4 miles east of said junction, and also included about 1½ miles of improvement on the Austin Spur. The work involved the reconstruction of the highway throughout the project. The alignment was improved by elimination of several kinks and sharp curves in the old highway. A new stone base was constructed and an oil mat wearing surface was constructed thereby giving the new highway improved alignment, a stable base and a smooth all weather travelway throughout the project.

Expenditures during the biennium for construction projects completed on the John Day Highway amounted to $882,485.

Central Oregon Highway, U. S. No. 20: Between Brothers and Hampton, this highway was widened to a 30-foot roadbed on which was constructed a 22-foot asphaltic concrete pavement flanked by 4-foot oiled shoulders. The length of this improvement was 20½ miles.

Between Vale and Cairo the highway was reconstructed to provide a 42-foot roadbed with a 22-foot wide asphaltic concrete pavement. The improvement was made, in general, by widening the existing highway with some minor line changes. A one-way couplet was provided for in Vale with eastbound traffic using the old highway on "A" Street and westbound traffic using Washington Street. A new bridge was constructed over the Malheur River east of Vale.

Expenditures during the biennium for construction completed on the Central Oregon Highway amounted to $452,729.

Oregon Coast Highway, U. S. 101: Nineteen construction projects have been completed on this highway during the biennium. One project involved the widening of about ½ mile of the existing highway southeast of Warrenton. The new construction provided an extra lane for slow moving vehicles on an ascending grade to facilitate the speedup of traffic on this section.

Between Cannon Beach and Arcadia the highway was paved with asphaltic concrete for a distance of 2.7 miles. Construction involved the placing of a heavy rock base and paving of the main highway roadbed and connections thereto.

Between Bay City and a point about two miles north of Tillamook, the highway was relocated for a distance of 2.32 miles. The new route was located to the west of the old, obsolete, circuitous route between these points. New construction included a two-lane asphaltic concrete pavement and the construction of six bridges which were constructed under a separate contract.

Between Waldport and Yachats this highway was reoiled for a distance of eight miles. This work was done to smoothen and reinforce the existing surfacing.

From Reedsport to Coos Bay the highway was reconstructed to provide an asphaltic concrete paved travelway for a distance of 21.40 miles. The new highway construction involved a major relocation of this section of crooked and obsolete highway. The new highway was constructed to modern standards for highway construction on primary highways and was constructed under eight separate contracts. One contract involved the grading

and paving of the section from Reedsport to Winchester Bay, a distance of 3.79 miles. The bridge over Scofield Creek in Reedsport, the box culvert at North Slough south of Hauser and the bridge over Haynes Slough north of Coos Bay were constructed under three separate contracts. The grading and paving of the sections from Winchester Bay to Clear Lake and from Clear Lake to the Forest Boundary, 3.45 miles and 1.17 miles in length, respectively, were constructed under two contracts. The section from Forest Boundary to Hauser, 8.44 miles in length, was constructed by the U. S. Bureau of Public Roads as a forest road project under two separate contracts which included a new bridge over Ten Mile Creek. The last contract, 4.55 miles in length, between Hauser and Coos Bay completed this section of the highway. This 21.40 miles of modern, safe highway replaced 25.07 miles of obsolete, dangerous and congested highway and represents another large improvement in the primary system of state highways.

An easy grade was secured on U. S. 101 south of Reedsport, Douglas County, by making this 100-foot cut.

From a point about a mile south of Coos Bay to Delmar, a distance of 6.6 miles, the Oregon Coast Highway received another major "face lifting." This section was constructed to a four-lane bituminous paved status following closely to the alignment of the old highway with a major portion of the project being constructed on a divided roadbed design. The existing highway was widened, repaved and utilized for two of the new lanes where alignment and grades permitted. Construction involved the construction of new bridges over Shingle Horse Slough and Davis Slough. This section completed the improvement of the highway between Coos Bay and Coquille on the most heavily travelled section of the Oregon Coast Highway.

About 3 miles north of Coquille a slide condition was corrected at China Camp Marsh. The project involved the reconstruction of about ½ mile of highway roadbed and construction of a new oil mat wearing surface.

Another major reconstruction of this highway was completed to the status of bituminous paved travelway between a point about 9½ miles south of Port Orford to a point about 16 miles north of Gold Beach. The highway was relocated mainly between the old highway and the ocean for a distance of 5.14 miles. This section was of two-lane design with extra lanes provided for slow moving traffic on ascending lanes. New bridges were constructed over Brush Creek, Rinehart Creek, Myrtle Creek and Mussel Creek. The grading and paving was done under two separate contracts.

Expenditures on the Oregon Coast Highway during the biennium amounted to $10,225,269.

Wallowa Lake Highway, Oregon No. 82: Relocation of 1.05 mile of highway on the Lostine River Bridge Section was performed during the 2-year period and involved grading on new line to support a 20-foot asphaltic concrete pavement flanked by 4-foot shoulders, and the construction of a new three-span reinforced concrete bridge over the Lostine River. The new location lies to the south of the old highway and was built on easy curvature and grade, straightening out a wide loop in the highway and reducing driving time between Wallowa and Lostine.

Another project on this highway involved the widening of 2.21 miles between La Grande and Island City. The improvement involved the widening of the highway to a 44-foot roadbed supporting a 24-foot asphaltic concrete pavement flanked by 10-foot stone shoulders.

Expenditures on this highway during the biennium amounted to $288,752.

Enterprise-Lewiston, Oregon No. 3: During the 2-year period, a Forest Road Project extending northerly 12.21 miles from the South Forest Boundary of the Wallowa National Forest has been oiled to a width of 20 feet on a new rock base. The work was supervised by the U. S. Bureau of Public Roads.

Expenditures on this highway during the biennium amounted to $9,164.

Baker-Homestead, Oregon No. 86: Between Table Rock Creek and Black Bridge, 5.81 miles of highway was regraded to eliminate sharp curves and provide a water grade throughout; supporting 10 inches of new rock base and a 20-foot oil mat surfacing flanked by 2½-foot rock shoulders, thus bringing this section to modern standards of construction.

Expenditures on this highway during the biennium amounted to $200,588.

McKenzie Highway, U. S. No. 126: In Springfield, a section of highway 2.18 miles in length was improved from the Willamette River Bridge to the east corporate limit of Springfield. A new highway was built for eastbound traffic from the Willamette River bridge easterly to 20th Street. The new work lies south of Main Street varying from 1 to 2 blocks south to a point opposite 18th Street where it swings northeasterly to join Main Street at 20th. This east routing was paved with asphaltic concrete to a width of 40 feet between new curbs with cross street connections provided to Main Street. Main Street, from 20th, to the easterly corporate limit of Springfield was widened and paved with asphaltic concrete to a width of 42 feet with 6-foot shoulders. Channelization at junction points, and traffic control devices were provided as well as a complete

storm sewer system, and an underground irrigation system was installed on landscape areas which were seeded to lawn.

Expenditures on this highway during the biennium amounted to $507,782.

Santiam Highway, U. S. No. 20: A major widening project on the Noble Slough-Foster Section was completed during the 2-year period. The project involved 7.83 miles of grade widening, rock base and 22 feet of asphaltic concrete pavement with 8-foot rock shoulders. An additional 10 feet of pavement was provided on the ascending grade just west of Foster for the use of truck traffic; also additional width pavements were provided for a parking area at a spring located about 1.3 miles westerly of Sweet Home, at the scale site to provide off road parking for trucks, and at Foster for convenience of the public in using store facilities. A section through Sweet Home was previously widened and paved, and this project completes the widening and paving work all the way from Noble Slough to Foster.

Expenditures on the Santiam Highway during the biennium amounted to $296,961.

Willamette Highway, Oregon No. 58: During the biennium the U. S. Bureau of Public Roads has supervised and completed a Forest Road Project on the Duval Creek-Deception Creek Section. This section some 4.64 miles in length was graded, surfaced and oiled on improved alignment and grade to provide a 30-foot oiled surfacing, tying in to the previously improved section from Meridan Dam to Duval Creek. A new structure was also built on new alignment over Deception Creek to the east of the old structure.

Expenditures on this highway during the biennium amounted to $463,211.

Fremont and Klamath Falls-Lakeview Highways, U. S. 395 and Oregon 66: Within the corporate limits of Lakeview these two highways were widened for a distance of one mile to a four-lane status. Construction involved the widening of the

two-lane highway to a width of 44 to 56 feet of asphaltic concrete pavement flanked by concrete curbs.

Expenditures on these two highways during the biennium amounted to $80,980.

Mt. Hood Highway, U. S. No. 26 and Oregon No. 35: During the biennium, the U. S. Bureau of Public Roads has supervised a Forest Road Project involving 2.52 miles of grading, surfacing and asphaltic concrete paving on new alignment between Zigzag and Rhododendron. The new alignment straightens out the highway and in general provides a 24-foot pavement flanked by 7-foot shoulders. Widening pavement areas were provided at Zigzag, a 0.4 mile section west of the Zigzag River Bridge and at Rhododendron.

Expenditures on this highway during the biennium amounted to $175,018.

Payette Bridge over the Snake River, built jointly by States of Idaho and Oregon.

Alsea Highway, Oregon No. 34: A new 120-foot reinforced concrete bridge was constructed over Mill Creek about 1½ miles west of the town of Alsea and 0.17 mile of grading and surfacing work was performed on approaches to the new structure which was built on new alignment to the south of the old covered timber structure which was removed.

Another project completed in 1954 called for widening the highway at four places between Yew Creek and the Alsea Summit and paving the additional width, thus providing an additional lane for slow moving traffic on ascending grades to protect and speed up the normal flow of eastbound traffic from the Coast.

The old obsolete steel truss bridge over Fall Creek was removed and replaced by a 150-foot reinforced concrete deck girder bridge constructed on improved alignment. The approaches to the new structure were constructed by State Forces.

Expenditures on this highway during the biennium amounted to $72,812.

Willamina-Salem Highway, Oregon No. 22: This primary highway, originally running from Salem to Dallas has been extended to include the Dallas-Coast secondary highway. In West Salem, the remaining highway roadbed embankments on the Marion and Center Street bridge approaches not completed under a previous grading contract were completed and the previously placed material was reshaped, a leveling course was placed and the roadway areas paved with asphaltic concrete; also an underground irrigation system was installed and the roadside areas landscaped to present a pleasing appearance to local residents and to the traveling public and to further provide a measure of erosion control on slopes exposed to weathering.

Construction of the Marion Street Bridge and reconstruction of the Center Street Bridge was completed during the 2-year period to become a part of the one-way grid system in Salem relieving traffic congestion at peak hours of travel.

Expenditures on this highway during the biennium amounted to $1,146,003.

Corvallis-Newport Highway, U. S. No. 20: Between Newport and Toledo one of the most tortuous and hazardous sections of primary highways left in the state was replaced by a 5.2-mile relocated section lying generally to the south of the old road. Five reinforced concrete bridges were constructed on the new line for the crossing of Beaver Creek and special foundation stabilization by means of counter balances and vertical sand drains were used where the new roadbed crossed the many low lying marsh areas. In general the improvement provides a 2-lane asphaltic concrete pavement, with additional lanes constructed on either side for the use of slow moving vehicles on ascending grades.

A new reinforced concrete deck girder bridge was constructed over Marys River approximately one mile west of Philomath. The new structure replaced the old covered bridge known as the "Noon Bridge."

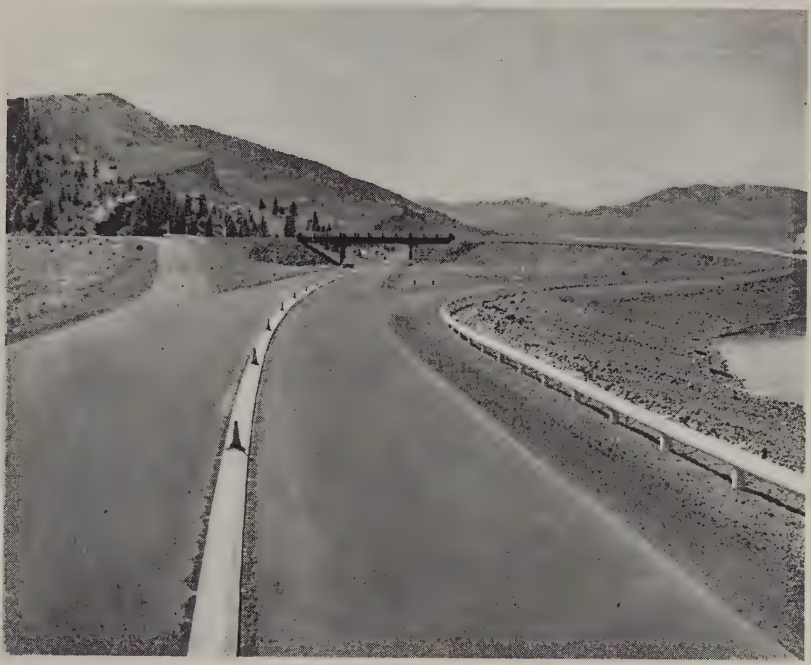
Expenditures on the Corvallis-Newport Highway during the biennium amounted to $1,406,573.

Siuslaw Highway, Oregon No. 36: A major relocation of a section of the highway about 2 miles east of Blachly over the Low Pass Summit was completed during the biennium. In general the new location lies to the south of the old highway and climbs easterly over the summit with light curvature and maximum 7% grade. Grading was performed, in general, to provide for a 2-lane asphaltic concrete pavement 20 feet in width with 2-foot shoulders on either side thereof, an additional lane was added for use of slow moving vehicles on ascending grades and 4 lanes of pavement were constructed over the summit for increased safety and efficiency of speeding up traffic.

Expenditures on this highway during the biennium amounted to $764,739.

Wilson River Highway, Oregon No. 6: 0.96 mile of the highway from a point about 2.08 miles east of McNamars Camp to a point about 0.27 mile west of the Devils Lake Fork Bridge was widened on ascending grades of the west slope to provide an

additional 11-foot lane of asphaltic concrete flanked by 4-foot shoulders for use by slow moving vehicular traffic. During the biennium work was completed on the following structures on the Glenwood-North Plains Section; the Wilkesboro Overcrossing Structure over the Southern Pacific Railroad and S. P. & S.



East approaches to Mosier interchange on Columbia River Highway, Wasco County.

Companies tracks, Gales Creek Bridge, Dairy Creek Bridge and 2 overflow bridges, and the Grade Separation Structure at North Plains.

Expenditures on this highway during the biennium amounted to $536,568.

Ochoco Highway, U. S. No. 26: A new location of the highway between Jones Ranch and Mitchell ties in with a previously improved section from Forest Boundary to Jones Ranch. Five new bridges were constructed and a 34-foot roadbed was graded

to provide for a 22-foot asphaltic concrete pavement and 3½-foot shoulders. Construction was to the latest standard of highway design.

Expenditures on this highway during the biennium amounted to $471,319.

Sherman Highway, U. S. No. 97: A 67-foot steel girder structure was constructed to carry the Union Pacific Railroad over a relocation of the highway about 1.6 miles south of the Town of Moro. 0.48 mile of relocated highway was graded to provide a 42-foot roadbed with 24-foot oil mat wearing surface flanked by 4-foot shoulders over a 16-inch rock base. The improvement provides a complete separation of highway and railroad traffic, eliminating the old hazardous grade crossing and the poor alignment previously travelled.

Expenditures on this highway during the biennium amounted to $125,386.

Umpqua Highway, Oregon No. 38: On the Middle Unit, Reedsport-Dean Creek Section, 2.15 miles in length, grading was performed on improved line and grade to provide a 2-lane oil mat wearing surface, flanked by 3-foot shoulders with an additional lane provided on ascending grades for slow moving vehicular traffic. Also completed during the 2-year period was a 3.6-mile reoiling project to improve the section of highway from the east end of the Umpqua River Bridge near Scottsburg to a point 0.47 mile east of Golden Creek.

Expenditures on this highway during the biennium amounted to $417,781.

Sunset Highway, U. S. No. 26: Between Quartz Creek and North Plains, 31.58 miles of existing bituminous surfacing was resurfaced with asphaltic concrete to a width of 24 feet to strengthen the travelway surface and enable it to better withstand the increasingly heavy demands of highway transportation along this route.

Expenditures on this highway during the biennium amounted to $683,385.

John Day-Burns Highway, U. S. No. 395: A Forest Road Project under the supervision of the U. S. Bureau of Public Roads was completed during the biennium. This project on the Silvies-Harney County Line Section involved grading on existing alignment to improved grade and surfacing and paving with asphaltic concrete to provide a 20-foot travelway with 3-foot shoulders on either side.

Expenditures on this highway during the biennium amounted to $1,380.

Wilsonville-Hubbard Highway: On this highway, formerly the south portion of the West Portland-Hubbard Highway, a major relocation from the Willamette River near Wilsonville to a connection with the existing concrete pavement at the Marion-Clackamas County Line provides 0.92 mile of 4-lane black top pavement from the bridge over the Willamette River to a point of intersection with the future Portland-Salem Expressway and 1.19 miles of 2-lane black top pavement from said intersection to the County Line. The Beaverton-Aurora grade separation structure on this project provides complete separation of traffic on the Beaverton-Aurora Road from the Wilsonville-Hubbard Highway for safer and faster travel for both local and through traffic.

Another project performed at the south termini of the highway during the 2-year period, completing the "Wilsonville Cut-off" as this highway is often called, provided for grading and paving of a new routing for southbound Pacific Highway traffic lying west of the present Pacific Highway and extending for about 0.7 mile roughly parallel thereto with connections and ramps graded and paved to provide interchange between the Wilsonville-Hubbard Highway route and the divided lanes of the Pacific Highway so traffic can flow freely to, from and along both routes.

Expenditures on this highway during the biennium amounted to $504,670.

Heppner Highway, Oregon No. 74: Regrading, surfacing and oiling work on the Lena-Nye Section 20.99 miles in length, brought the status of the Heppner Highway to an oiled travelway throughout its entire length. In general the old roadbed

T. H. Banfield Expressway easterly from Fairview, Multnomah County.

on this section was widened with minor line changes, flattening some of the sharper curves, new rock base material was added to the easterly 17.60 miles and an oil mat wearing surface 18 feet in width was constructed throughout the entire length of the project.

Expenditures on this highway during the biennium amounted to $448,164.

T. H. Banfield Expressway: During the biennium work progressed on the expressway with two road projects and 5 structure projects completed during that period. On the 92nd Avenue-Fairview Section, 7.19 miles of grading work was completed to provide for divided 4-lane construction, access and service roads were graded and paved and county roads were relocated to provide access at controlled points. Also completed were a reinforced concrete grade separation structure to carry Expressway traffic over a connection to Multnomah Street at 92nd Avenue; twin reinforced concrete grade separation structures to carry Expressway traffic over 122nd Avenue; reconstruction of the 102nd Avenue Overcrossing structure and completion of the grading work on the Expressway at the structure site; and twin reinforced concrete viaducts to carry the Expressway traffic over the Union Pacific Railroad Company tracks (Cereghino Overcrossing).

A connection to the Expressway between N. E. 82nd Avenue and N. E. Halsey Street was graded and paved to carry N. E. Halsey Street traffic between N. E. 82nd Avenue and N. E. 99th Avenue during construction of the Halsey Street structure over the Expressway and to serve as a service road and connection to the Expressway upon final completion of the 92nd Avenue-Fairview Section.

A grade separation structure to carry traffic using the Arata Road over the Expressway safely and without interference with through traffic on the Expressway was completed on the Fairview-Sundial Section.

Expenditures on the T. H. Banfield Expressway during the biennium amounted to $4,097,867.

Portland-Salem Expressway: Eighteen construction projects have been completed on this highway during 1953 and 1954.

On the Barbur Boulevard-Boones Ferry Road Unit, the old West Portland-Hubbard Highway for a distance of 3.44 miles was widened to a width of 94 feet and a divided 4-lane asphaltic concrete pavement flanked by 10-foot shoulders constructed thereon. Frontage roads, and traffic interchanges providing complete separation of traffic at four county road crossings were also completed. During the two-year period two additional structures on this section were completed as follows: The Cook Overcrossing structure over the Southern Pacific Company tracks was widened to take care of 4-lane traffic, and the Lower Boones Ferry Road Overpass was built to carry the Expressway traffic over the relocated Boones Ferry Road.

Two roadway projects completed the grading and paving work on the Boones Ferry Road-Willamette River Unit of the Expressway. The grading project included the construction of the Beaverdam Bridge over low country drainage and twin grade separation structures to carry the new route over the Wilsonville-Oregon City County Road. The grading and paving contracts provide a 4-lane divided highway of latest design with complete separation of local and through traffic provided by grade separation structures, also completed during the 2-year period at Nyberg Road, Sagert Road, Norwood Road, Stafford Road, and Bockman Road. At Nyberg Road, Stafford Road and the Wilsonville-Oregon City Road access to the main highway was provided by controlled connections with the main highway being widened to provide speed change and passing lanes for continuous high speed operation on the main highway by through traffic without interference with or from traffic coming or leaving this highway at said access points. Another project on this Unit involved the construction of a reinforced concrete grade separation structure to carry the Southern Pacific Company's West Side Branch tracks over the new Expressway near Tualatin.

Two bridge contracts were completed during 1953 and 1954. One involved all work necessary in constructing a reinforced concrete and steel girder bridge (the Boone Bridge) over the Willamette River near Wilsonville except for the furnishing

Two structures on Portland-Salem Expressway crossing over the Wilsonville-Oregon City County Road, Clackamas County.

and erecting of the structural steel for the three girder spans; while the second contract called for the furnishing and erecting of the structural steel for the girder spans.

From the Willamette River to Gervais, 11.89 miles of grading was performed to provide for 4-lane construction with two 50-foot roadbeds separated by a 30-foot median strip. Separation of county road traffic by grade separation structures are provided for and work is now underway.

The traffic interchange structure has been completed at the interesction of the new Exressway with the Hillsboro-Silverton Highway West of Woodburn.

The section from Gervais to Hayesville is being graded but has not been completed at this writing. Three paving contracts have been awarded for paving work between the Willamette River and Hayesville and are expected to be completed some time in 1955

The section between Hayesville School and Battle Creek Junction, the Salem By-Pass, has been completed under three grading contracts, one paving contract and three bridge contracts to provide, in general, a 24-foot asphaltic concrete pavement with 4-foot paved shoulders on the main highway roadbed, with additional widths provided for turnouts and speed change lanes at connections to existing streets and on traffic interchanges at Market Street and the existing highway at Battle Creek Junction south of Salem. Complete separation of local and through traffic at Silverton Road, Sunnyview Avenue, Garden Road, "D" Street, Center Street, State Street, Turner Road, Market Road No. 56, Boone Road and Pringle Road by means of grade separation structures have been provided.

The highway has been carried over the Southern Pacific Company Silverton branch line north of State Street and its main line south of the Turner Road. New bridges were constructed over the overflow channel of Mill Creek and over Mill Creek and a grade separation structure was completed at Battle Creek Junction to carry the Expressway traffic safely and without inconvenience over the north branch connection to the Pacific Highway. This section of the highway will serve to carry through highway truck and passenger car traffic past Salem without congestion of city street traffic and with increased safety and convenience to local and highway traffic alike.

Expenditures on the Portland-Salem Expressway during the biennium amounted to $9,124,460.

Secondary State Highways

During the 1953-1954 period there have been 43 highway construction projects and 14 major bridge construction projects completed on 32 of the 128 highways on the secondary state highway system.

A brief description of these projects, grouped by geographical divisions of the state, is as follows:

Division No. 1: Comprising the easterly portions of Columbia County; the northern portion of Yamhill County, the westerly and southern portion of Hood River County; the westerly

portion of Wasco County and the counties of Multnomah, Clackamas, and Washington. One project was completed during the biennium and involved 2.74 miles of re-oiling work on the Beaverton-Aurora Highway between Tigard and Durham to level up and improve the riding qualities of this section of highway which had become badly broken up by weather and traffic conditions.

Division No. 2: Comprising the westerly portion of Columbia County, the southerly portion of Yamhill County and the Counties of Clatsop, Tillamook, Lincoln, Benton, Polk, Marion and Linn. Twelve highway construction projects and seven major bridge projects, were completed during 1953 and 1954, involving 15.62 miles of grading, 25.07 miles of rock base and surfacing, 15.83 miles of oiling, 32.71 miles of asphaltic concrete pavement and 7 major bridges.

On the Cascade Highway between Molalla Junction and Marquam, a 1.64 mile section was graded to eliminate sharp curvature and to improve sight distance, a new structure was constructed over Garret Creek replacing the old obsolete structure and 5.17 miles of new asphaltic concrete pavement and resurfacing was constructed to provide a 20-foot travelway throughout the length of the project.

On the Nehalem Highway a new reinforced concrete bridge was constructed over the Nehalem River at Mile Point 33.7 and 0.32 mile of approaches was graded and surfaced on new alignment eliminating the sharp curves at the old bridge location; also a section of the highway between the Nehalem River and the Columbia County Line, a distance of 4.36 miles, has been re-oiled to provide a better riding surface; while between Treharne and the Washington County Line a 4.86-mile section was improved by widening of the existing roadbed, to provide a minimum 24-foot asphaltic concrete pavement flanked by 2-foot shoulders. Another bridge completed during the biennium on new alignment of the Nehalem Highway was a 300-foot reinforced concrete bridge over the Nehalem River at Mile Point 30.7 together with 0.58 mile of grading and rock base construction on the approaches.

On the Alsea Highway a new reinforced concrete bridge was constructed on new alignment over Fall Creek replacing the old narrow and obsolete steel truss bridge.

Between Bear Creek and Scotts Point on the Siletz Highway, 1.91 miles of highway roadbed was reconstructed on improved line and grade providing a 20-foot asphaltic concrete pavement flanked by 2-foot shoulders over a 13-inch rock base. The old timber bridge over Bear Creek was removed and Bear Creek diverted via a channel change to a new crossing 100 feet to the west and carried under the highway through a new concrete box culvert.

Re-oiling work was performed on intermittent sections of the Monmouth Highway between its Junction with the Kings Valley Highway and the Pacific Highway West, the re-oiling work, totaling 4.75 miles, was performed to provide a uniform smooth riding surface on sections which were broken up or rutted from heavy traffic conditions.

On the Salem-Dayton Highway between Glenn Creek Road and the Southern Pacific Railroad Crossing in West Salem 0.35 mile of grading, rock base construction and black top paving was performed. This work was performed to raise the grade above normal high water level and provide a 24-foot asphaltic concrete pavement flanked by 8-foot rock shoulders; also on this same highway re-oiling work was performed on 1.5 miles of existing roadbed between Grand Island Junction and the Junction of the highway with the Bellevue-Hopewell Highway.

A 0.99-mile section of the Bellevue-Hopewell Highway between Amity and Bethel Road was re-oiled to repair and strengthen the old oiled macadam surface which was broken up and rutted by weather and traffic condition.

Re-oiling work on 2.65 miles of the Silver Creek Falls Highway east of North Fork Silver Falls Creek was performed to replace the old broken up oiled macadam and provide a stable smooth roadway for tourists visiting the Silver Falls Park recreational area.

A 1.54-mile section of the Lafayette Highway which was badly broken up by weather and traffic was re-oiled to provide a stable and smooth riding surface.

On the Albany-Lyons Highway a new reinforced concrete bridge was constructed over Crabtree Creek and 0.47 mile of highway roadbed, rock base and 20-foot black top pavement was constructed on new alignment for approaches to the bridge.

On the North Santiam Highway between Stout Creek and Mill City, 9.21 miles of rock base and a 22-foot black top pavement flanked by 4-foot shoulders was constructed on the previously graded section, opening the new highway to traffic and providing a stable all-weather roadway of latest design. Between Mill City and Niagara, 0.20 mile of existing roadbed was widened to provide acceleration and deceleration lanes for a new connection with the old highway at Mill City and 7.30 miles of existing oiled surfacing was resurfaced with a 22-foot asphaltic concrete pavement with 4-foot shoulders adjacent to the new pavement oiled to prevent infiltration of water at the pavement edges and the subsequent weakening and breaking up of pavement edges. The improvement will provide a fast, stable all-weather roadway capable of withstanding the heavy traffic loads to which it is subjected. An access road was also constructed about 3.5 miles west of Mill City to provide access from the North Santiam Highway to the North Santiam Forest Wayside for the convenience of tourists and local people desiring to make use of its facilities. At Mehama, a new connection 0.22 mile in length between the new and old North Santiam Highways was constructed to provide a 22-foot black top pavement flanked by 4-foot shoulders all supported on a stable base. Emma Street in Mehama was surfaced and oiled to provide a 20-foot travelway for the convenience of school bus traffic. Between Salem and Lancaster Drive 1.35 miles of grading and paving work was performed on new location of the North Santiam Highway in connection with the new Salem By-Pass Section providing 24-foot black top pavement on a 10-inch rock base, flanked by 8-foot shoulders, 4 feet of which, adjacent to the pavement was oiled to prevent infiltration of water at the pavement edges.

On the Hillsboro-Silverton Highway between Woodburn and Mt. Angel, 5.89 miles of existing highway roadbed was widened and improved as to line and grade, and 0.40 mile of new roadbed was constructed to eliminate sharp curvature, and a 20-foot

black top pavement flanked by 6-foot rock shoulders was constructed to provide a smooth, all-weather roadway of latest design. In the City of Mt. Angel 0.87 mile of the Hillsboro-Silverton Highway has been widened to 40 feet between curbs and paved with asphaltic concrete to provide 2-lane traffic with 8-foot parking lanes, reducing congested traffic conditions of mixed local and through traffic.

Salem By-pass near Hayesville interchange before opening of highway.

Between Fern Corner and Burns Corner on the Kings Valley Highway, 1.54 miles of grading was performed generally following the old alignment but with light curvature and easy grades. On this section, 12 inches of rock base was placed and a 20-foot black top pavement, flanked by 3-foot shoulders, was constructed to provide a stable all-weather roadway; and new reinforced concrete slab bridges were constructed over Small Creek, Little Luckiamutte River and Fern Creek replacing the obsolete narrow bridges at these locations.

Division No. 3: Comprising the counties of Lane, Douglas, Coos, Curry, Josephine and Jackson. In this division there were fourteen construction projects completed during the 2-year period, involving 29.69 miles of grading, 33.98 miles of rock base and surfacing, 7.27 miles of oiling, 26.29 miles of asphaltic concrete pavement and 6 major bridges.

One mile of the upper end of the Alsea-Deadwood Highway was widened and surfaced to provide a 20-foot rock wearing surface better able to withstand logging traffic to which it is subjected and thus reduce maintenance cost to the state.

The construction of 2.78 miles of rock leveling course and 20-foot black top pavement over the previously graded and surfaced section of the Coos River Highway between Catching Slough and Enegren Ferry, has completed the improvement of this section and eliminated the use of the Enegren Ferry Service.

A section of the Powers Highway, 0.62 mile in length in the vicinity of Warner Station was graded, surfaced and oiled on new alignment to provide a 20-foot oiled travelway with 2-foot shoulders.

On the Elkton-Sutherlin Highway between Calapooya Creek and Sutherlin 3.84 miles of grading, rock base construction and 20-foot asphaltic concrete paving on new alignment was performed, reinforced concrete bridges were constructed over two crossings of Dodge Creek and a 332-foot reinforced concrete structure was constructed over Calapooya Creek. This improvement provides a fast, smooth roadway and reduces materially the driving time between Elkton and Sutherlin. Another project completed on this highway extended the above development into the town of Sutherlin, a distance of 0.81 mile, and consisted of grade widening and the construction of a 44-foot black top pavement between new curbs, reducing congested traffic conditions within the town.

A 0.63 mile of the Tiller-Trail Highway between Canyonville and O'Shea Creek was relocated to bring it into Canyonville on Third Street about four blocks north of its old junction with the Pacific Highway with a new reinforced concrete bridge constructed over Canyon Creek. On Third Street between Main and Canyon Streets the existing street was paved with asphaltic concrete to a width of 37½ feet, while the rest of the project

was graded and a 22-foot pavement of asphaltic concrete flanked by 8-foot shoulders was constructed, 4 feet of the shoulders adjacent to the new pavement being oiled to prevent infiltration of water.

On the Jacksonville Grade Unit, of the Provolt-Jacksonville Section of the Medford-Provolt Highway, 1.23 miles of grading, rock base and paving work was performed on new alignment to provide a 20-foot black top pavement flanked by 4-foot oiled shoulders. The new alignment lies to the east of the old highway and eliminates the sharp tortuous curves to cut down driving time and accident hazards.

The Williams Highway between Grants Pass and Murphy was improved by widening 5.82 miles of existing roadbed and constructing 0.25 mile of new roadbed to flatten two curves, providing a 22-foot oiled-wearing surface with rock shoulders on either side thereof varying in width from one to four feet.

On the Springfield-Creswell Highway 2.69 miles of grading, surfacing and black top paving on improved alignment and grade was performed from Jasper Bridge to the junction of the Springfield-Creswell and Willamette Highways 0.2 mile east of the Pleasant Hill Union High School. This improvement provides a 22-foot pavement of asphaltic concrete flanked by 4-foot oiled shoulders. Two reinforced concrete structures were constructed to provide relief openings in the highway embankments for high water overflow to prevent flooding of adjoining properties, and a deceleration lane was constructed along the Willamette Highway as a safety measure for traffic turning from the Willamette Highway onto the Springfield-Creswell Highway at the junction of the two highways.

On the Territorial Highway between the Benton County Line and Cheshire, 2.4 miles of new roadbed was constructed on improved line and grade and 2.6 miles of reshaping and widening work on the old roadbed was performed to provide for the construction of 6.51 miles of rock base and 20-foot black top pavement flanked by 3-foot shoulders; also 1.80 miles of the highway from the junction of the Territorial and Siuslaw Highways to Smithfield was graded, surfaced and paved with 20-feet of asphaltic concrete pavement flanked by 4-foot rock shoulders; also 0.58 mile of re-oiling work was performed

between Elmira and the Long Tom River Overflow to provide a smoother and more stable riding surface. Another project completed on this highway between Gillespie Corner and Lorane, involved the widening and shaping of 6.00 miles of old roadbed and the construction of 6.00 miles of rock base and a 20-foot black top pavement flanked by 2-foot rock shoulders to provide an all-weather type roadway following the old alignment and capable of withstanding heavy traffic loads.

Division No. 4: Lying easterly of the summit of the Cascade Mountains and comprising the central portion of Oregon between the Columbia River and California. Nine highway construction projects were completed during 1953 and 1954, involving 32.33 miles of grading, 39.29 miles of rock base and surfacing, 32.03 miles of oiling, 12.19 miles of asphaltic concrete pavement and one major bridge.

Completion of the Middle and East Units of the Deschutes County Line-Prineville Section of the O'Neil Highway completes the improvement of this highway by providing an oiled surface throughout its entire length. 3.95 miles of grading, surfacing and oiling to a 20-foot width on improved line was performed on the Middle Unit and 4.57 of grading, surfacing and oiling to a 20-foot width on improved line was performed on the East Unit.

On the West Unit, Eagle Rock-Post Section of the Paulina Highway, 5.18 miles of grading, surfacing and paving to provide a 20-foot asphaltic concrete pavement was performed to provide a stable all-weather roadway following the old roadway with a few minor changes in alignment.

As a part of the Division 4 re-oiling project 2.96 miles of oiling was performed on the Chiloquin Highway between the Chiloquin Spur and the Crater Lake Highway Junction to provide a stable and smooth riding surface over the old oiled macadam surfacing which was broken up by weather and heavy traffic conditions.

On the Klamath Lake Highway between Lake of the Woods Junction and Wocus Marsh, 18.16 miles of roadbed was graded, surfaced and oiled on improved line and grade to provide a 20-foot oiled surfacing flanked by 2-foot shoulders, and a new

150-foot reinforced concrete bridge on timber piling was constructed over the Geary Canal. This improvement provides an all-year outlet for farm crops and timber and will open access to the west side of Klamath Lake for recreational development.

The Crescent Lake Highway from its junction with the Willamette Highway to the easterly boundary of the Crescent Lake Townsite was improved by 0.47 mile of grading and shaping of the old roadbed and the construction of 2.39 miles of crushed cinder base and a 20-foot oil mat wearing surface to provide a stable, all-weather roadway into Crescent Lake; also, an oil mat or wearing surface was constructed on the warm-up apron area at the east end of the Odell Lake Flight Strip on behalf of and at the expense of the Oregon State Board of Aeronautics.

On the Warner Highway, between Fremont Junction and Rosa Creek, 7.01 miles of the existing oiled surfacing has been resurfaced with 20-feet of asphaltic concrete pavement to provide a smoother and more stable riding surface.

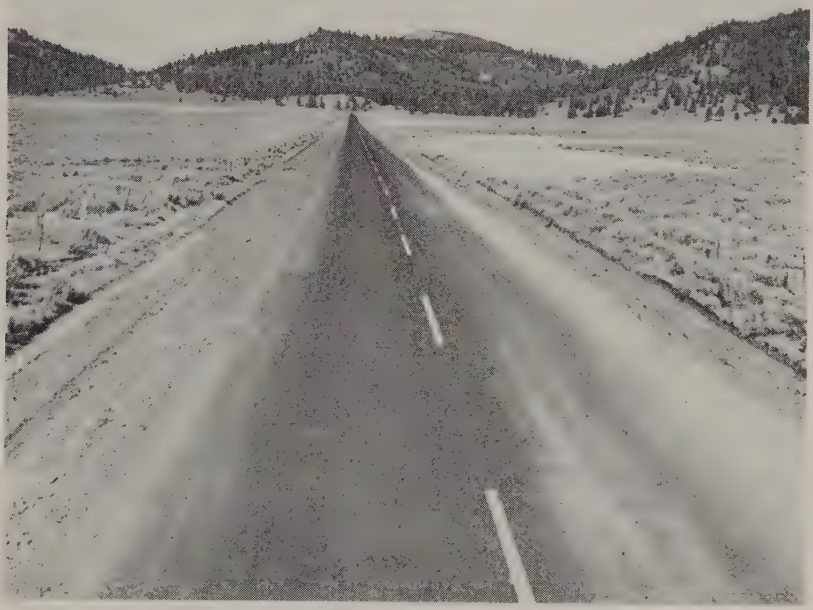
Division No. 5: Comprising the most easterly portion of Oregon. In this division, there were 5 construction projects completed during the 1953 and 1954 seasons, involving 15.22 miles of grading, 39.78 miles of rock base and surfacing, 11.69 miles of oiling and 18.21 miles of asphaltic concrete pavement.

The 5.04-mile section of the Wasco-Heppner Highway between York Ranch and Hay Creek was strengthened and the riding qualities improved by the addition of a new rock surfacing course.

On the Middle Unit, Princeton-Follyfarm Section of the Rome-Princeton Highway, 10.18 miles of grading and rock base construction and 11.69 miles of oiling work was performed completing the improvement of this highway with oiled surfacing throughout its entire length.

A ten-mile section of the I. O. N. Highway over the Blue Mountain Pass was resurfaced with 20-feet of asphaltic concrete pavement laid over the old oiled surface which was badly broken up by weather and traffic.

On the Little Sheep Creek Highway 5.04 miles of widening, rock base construction and paving work was performed between the City of Joseph and Sheep Creek Hill to provide 20-feet of black top pavement flanked by 2-foot oiled shoulders. Another project completed on this highway involved the construction of 3.17 miles of rock base and a 20-foot black top pavement on the previously graded Sheep Creek Hill Section. A third project completed on this highway involved the construction of a crushed rock surfacing varying in width from 16 to 18 feet strengthening the existing base between Sheep Creek Hill and Imnaha to better withstand the heavy loads to which this section of road is subjected.



A standard asphaltic concrete pavement was constructed on the Warner Secondary Highway east of Lakeview.

Expenditures for construction work, under the Highway Department's supervision, on the state secondary highway system during the biennium amounted to $6,695,506.

County Roads

During 1953 and 1954, 51 highway and bridge construction projects have been completed or are nearing completion under the supervision of the State Highway Commission on county roads lying outside of the primary and secondary state highway systems. These projects were located on the federal system of secondary highways and were constructed under cooperative agreements with the U. S. Bureau of Public Roads and the respective counties. These projects were located in 31 of the state's 36 counties, and involved 89.75 miles of grading, 134.09 miles of rock base and surfacing, 156.40 miles of oiled surfacing, 23.61 miles of asphaltic concrete paving and the construction of 11 bridges.

A brief description of these projects listed by counties is as follows:

Baker County: The New Bridge-Richland Section of the New Bridge County Road was improved by minor grading and by the addition of a gravel base and a 20-foot oiled surface for greater stability and improved riding quality. The length of the improved section is 2.42 miles.

On the Rock Creek-Haines Section of the Rock Creek County Road, 1.53 miles of roadway was regraded and reshaped, drainage improved and the travelway strengthened by the addition of 17 inches of gravel base over which was placed a 20-foot oiled riding surface.

Another project completed in Baker County during the past two-year period is the Pocahontas-Baker Section of the Baker-Pine Creek-Wingville County Road west of Baker. The work consisted of regrading, surfacing and oiling 6.17 miles of county road to provide a dust free, hard surfaced travelway 20 feet wide.

Benton County: The Lewisburg Loop Section of the Armstrong Lane and Dickinson Road was improved by a new location of the Armstrong Lane and by regrading the Dickinson Road on an improved line and grade. The roadbed was graded to an overall width of 30 feet with better drainage and topped with a gravel surfacing to provide a 26-foot travelway. The length of the project was 2.32 miles.

On the Twin Bridges-Muddy Creek Section of the Beaver Creek-Greenberry County Road, 1.03 miles of grading, surfacing and oiling was completed on an improved line and grade in order to provide a hard surfaced, all-weather road better suited to withstand the heavy traffic to which it is subjected.

Clackamas County: A 156-foot reinforced concrete deck-girder bridge was constructed over Kellogg Creek on the Milwaukie-Gladstone County Road, replacing the old, narrow and inadequate timber structure. The approaches were graded to an improved grade and width to provide for a 24-foot black top pavement.

Also in Clackamas County, a 3.11-mile section of the Clackamas-Boring County Road between Damascus and Boring was improved by widening the old road and making minor changes in alignment to ease the curvature. The completed project gives the traveling public a good hard surfaced asphaltic concrete pavement 20 feet wide capable of withstanding the loads to which it is being subjected.

Clatsop County: During the biennium, a section of road between Miles Crossing and Johnson Road on the Youngs River Loop County Road was improved by widening the old roadbed to a width of 27 feet and placing on it an asphaltic concrete pavement 18 feet wide. The length of the new construction was 3.78 miles.

Columbia County: The St. Helens-McNulty Creek Section of the Old Portland County Road and also the Gable Road connection to the Columbia River Highway was improved by 1.57 miles of grading, rock base and asphaltic concrete paving. The obsolete, narrow bridge over McNulty Creek was removed and replaced by a reinforced concrete box culvert.

On the Apiary Section of the Rainier-Apiary County Road northeasterly from Apiary 1.33 miles of road was graded on improved line and grade. A rock base was placed on the subgrade and the county then placed an oil mat wearing surface 20 feet wide to provide a roadway of adequate strength to withstand the heavy traffic which is now using it.

An access road to the Beaver Ammunition Storage Point was completed during the biennium. By placing an oiled surface 18 feet wide over existing county roads and by widening the roadbed in the vicinity of the Bradbury School to provide an area for stopping off the travelway, an oiled road has been constructed capable of handling the traffic to which it is being subjected. This project was constructed on behalf of the Bureau of Public Roads and was financed wholly with federal funds.

Coos County: A reinforced concrete and steel bridge with a vertical lift draw span was constructed over the Coquille River on the Seven Devils Road. Also 0.49 mile of approach roadbed was constructed. This project eliminated the old ferry crossing at Bullards.

Crook County: The Deschutes County Line-Crooked River Section of the Terrebonne-O'Neil County Road and the Lone Pine School-O'Neil Section of the Lone Pine School County Road have been improved by reshaping 3.49 miles of old highway roadbed and constructing 1.7 miles of new highway roadbed. The completed sections now have 20-foot oiled travelway surfaces. The bridge over Crooked River on the Lone Pine School County Road was redecked.

On the Powell Butte Junction-Deschutes County Line Section of the Powell Butte County Road, 4.23 miles of grading, surfacing and oiling was completed on improved line and grade to provide a hard surfaced, all-weather road of modern design.

Curry County: On the Sixes Junction Section of the Sixes-Dry Creek County Road, 0.36 mile of grading and paving was completed to provide a relocation of the county road to a new junction with the Oregon Coast Highway just north of the existing junction at Sixes. The new construction provided a more suitable connection with greater visibility.

Deschutes County: On the Forest Boundary-Lapine Junction Section of the Burgess County Road north of Lapine, 4.01 miles of cinder leveling course and oil mat wearing surface was placed over the 30-foot wide roadbed and cinder base which was previously constructed by the county. Also on this section

of highway a reinforced concrete bridge was constructed over the Little Deschutes River to replace the old timber bridge.

The Forest Boundary-Bend Section of the Tumalo Falls-Bend County Road was improved by oiling 10.05 miles of roadbed which had been previously reshaped and strengthened with additional base material by the county. This section of road is now an all-weather, hard surfaced road suitable for the type of travel to which it is subjected.

Douglas County: The Lone Rock Bridge-Rock Creek Section of the North Umpqua County Road was improved by grading on new grade and alignment and placing on the new grade a rock base and an oil mat wearing surface. This project is a continuation of the improvement of the route from Roseburg easterly and will extend to a point about 1 mile easterly of Idleyld. This improvement brings the section of road up to modern standards of highway improvement.

Gilliam County: A 2.22-mile section of the Mikkalo County Road between Mikkalo and Olex Junction and 6.03 miles of the Lone Rock County Road between a point 4.7 miles east of Condon and the junction of the Lone Rock County Road with the Lost Valley County Road were improved by constructing an oiled wearing surface 18 feet wide over the rock base that was in place. This project provided an all-weather type roadway which will help to reduce maintenance costs, and give better service to the users of the road.

On the Ridge Road-Morrow County Line Section of the Base Line County Road and the North Unit, Lost Valley Road-Lonerock Section of the Lonerock County Road, a total of 10.6 miles of oiling work was completed. The travelway is now 18 feet wide and is sufficient to provide a dust free, stable roadway of good riding qualities.

Grant County: The Rush Creek-Granite Section of the Ritter Road was graded on an improved grade, alignment and width to provide a 25-foot subgrade. This 2.79-mile section has since been rock surfaced by the county.

Hood River: A 192-foot reinforced concrete deck girder bridge was constructed over the East Fork of the Hood River

on the Dee County Road. Also 0.11 mile of approaches was built providing an oiled wearing surface 22 feet wide.

On the May Street-Belmont Road Section of the Frankton County Road, the Barrett School Section of the Methodist Lane County Road and the Post Canyon Road-Barrett Road Section of the Country Club County Road, a total of 2.76 miles of roadbed, was widened, surfaced and 20-foot wide oiled travelway surface constructed. These sections are now uniform and stable and suitable for the traffic conditions to which they are subjected.

On the Woodworth County Road, a new reinforced concrete bridge 156 feet long was constructed over the East Fork of Hood River replacing the old timber structure. Also 0.94 mile of the Woodworth County Road was reconstructed to modern standards to provide an oil travelway surface 20 feet wide.

Jackson County: During 1953 and 1954, three reinforced concrete bridges were constructed over Thompson Creek on the Thompson Creek County Road south of Applegate. These structures were constructed on new alignment along side the old narrow wooden structures which they are replacing. The grading, drainage, surfacing of approaches and removal of the old structures were performed by the county.

Josephine County: A section of the Holland Loop Road between the George Road and East Junction has been reconstructed. This section of road was regraded to eliminate some bad curves in the original road and to provide a wider roadbed on which was placed a 20-foot oiled riding surface.

Klamath County: 9.51 miles of the Sprague River County Road between Sprague River and Beatty Junction was oiled over a stable rock base to provide a 20-foot smooth travelway surface free of dust and irregularities.

Lake County: A rock leveling course and a 20-foot wide oil mat wearing surface was constructed over the previously placed rock base to provide a stable all-weather road on the Cottonwood Creek and Westside County Roads between the town of Westside and Maddock Corner on the Klamath Falls-Lakeview Highway about 3 miles west of Lakeview.

Lane County: The Eugene-Marcola County Road along the northerly corporate limits of Springfield has been improved by the widening and shaping of the old roadbed and constructing thereon a 20-foot oiled travelway with 4-foot rock shoulders. The drainage was also improved to provide an all-weather roadway. This is the first unit of the ultimate development of the Eugene-Marcola County Road as a part of the Federal Aid Secondary System of County Roads.

The new double highway on U. S. 99 north of Ashland, Jackson County.

On the Linn County Line-Coburg Section of the Eugene-Harrisburg County Road, 5.54 miles of grading and oiling was completed on an improved grade and line to provide a 20-foot oiled surface constructed to the modern designs adopted for that type of road.

Lincoln County: The Reedy Creek-Beamer Creek Section of the Yachats River County Road involved the grading of 1.72

miles of roadbed on improved line and grade and provided for a minimum 25-foot roadbed on which was placed a gravel surfacing. Later the county placed an additional 2 inches of surfacing material. The final result was a stable, well drained roadway with a 22-foot travelway width.

Linn County: 7.56 miles of grading, surfacing and oiling work was completed on the Tangent (Orleans-Oak Creek School) Section of the Orleans-Lebanon County Road. This project connects with the Corvallis-East Side Secondary Highway near Orleans and about 3½ miles east of Corvallis and follows the old county road, with some reduction of curvature, easterly across the Pacific Highway East (at a point about 1 mile north of Tangent) and thence on easterly to a county road intersection a short distance south of the Oak Creek School. A new 324-foot bridge over the Calapooya River has been constructed to take the place of the old bridge which was removed.

Also in Linn County, 5.68 miles of the Scio-Stayton County Road between Kingston and Scio and 5.02 miles of the Lebanon-Brownsville County Road between Oak Creek and Plainview were oiled to a width of 20 feet.

The Jefferson Junction-Knox Butte Section of the Hardscrabble Hill Road and the Cox Creek-Lebanon Section of the Cox Creek Road were improved by the placing of a 20-foot oiled travelway surface over a rock base which was previously placed by the county. The two sections of road totaling 6 miles in length are now hard surfaced, all-weather roads, capable of handling the traffic to which they are being subjected.

Malheur County: A section of road between the Weiser and Payette Spurs on the Hy-Line County Road north of Ontario was graded to improve the present grade and to make two minor changes in alignment which reduced the sharp curvature of the old road. The improvement provided the 7.13 miles of roadway with improved drainage and a 20-foot oiled surface. The result is a stable all-weather roadway of modern design.

Marion County: On the Salem-Roberts Section of the Independence-Salem County Road, 2.98 miles of highway was improved by grading and placing an asphaltic concrete pavement

22 feet wide. The project has eliminated the old narrow, winding road and replaced it with a stable highway of modern design.

Multnomah County: The Reeder County Road between Gilbert River and the Sauvie Island Road and the Gillihan County Road between its junction with Reeder Road and a point about 2.3 miles north of the Sauvie Island Bridge were improved by widening the old roadbed and placing asphaltic concrete pavement 20 feet wide throughout the total length of 5.74 miles.

Polk County: On the Burns Corner-Lewisville Section of the Burns Corner-Suver Road, 3.18 miles of highway roadbed was constructed on improved line and grade and provided a 20-foot oiled surface. This improvement will result in a stable all-weather roadway of latest design for the convenience of the traveling public.

Sherman County: Between Mud Hollow Canyon and Wasco on the Fulton Canyon-Wasco County Road, 1.71 miles of highway was widened to a roadbed width of 26 feet, except for approximately 3 blocks in the town of Wasco where the roadbed was graded 40 feet wide to provide extra lanes for parking and stopping convenience. The oiled surface width is 20 feet throughout the length of the project. This improvement provides a wider and more stable roadway to better handle the traffic to which it is subjected.

Tillamook County: On the Summit Section of the Hemlock-Sand Lake County Road, 0.7 mile of roadbed was constructed on a much improved line and grade. The roadbed was graded to a 28-foot width through cuts and on low fills and to a 30-foot width on fills over 10 feet in height. Culvert and drain pipe installations provided a well stabilized roadway. The county has placed a rock surfacing over the section.

Umatilla County: A 9.81-mile section of the Juniper Canyon Road between its junction with the Athena-Holdman Secondary Highway and its junction with a road leading easterly to Van Sycle has been reinforced with some additional rock base material and an 18-foot oiled travelway surface. This improvement has provided a stable all-weather roadway designed to withstand the traffic loads to which it is subjected.

Union County: A section of the Lower Cove Road between its junction with the Wallow Lake Highway and a point about 2.23 miles easterly of its crossing of the Grand Ronde River has been oiled 20 feet wide to provide a dust free road with smooth and uniform riding qualities.

Wasco County: The Bakeoven Grade Section was improved by the reconstruction of 0.4 mile, and surfacing and oiling 5.1 miles of the Shaniko County Road from Maupin easterly to the Bakeoven Grade. The project included a line change in the old road at the Crossing of Bakeoven Creek thereby replacing the old twisty road with a new improved routing for a distance of 0.4 mile. A new bridge over Bakeoven Creek was also constructed.

Another project that was completed during the biennium was the Friend-Dufur Junction Section of the Friend County Road approximately 9 miles south of Dufur. This project consisted of regrading 5.78 miles of highway roadbed, on top of which was placed a crushed rock base and a 20-foot wide oiled wearing surface providing a dust free road capable of handling the traffic to which it will be subjected.

Washington County: The Beaverton Junction-Progress Section of the Oleson County Road has been modernized by widening the roadbed and also by making two minor changes in alignment which eliminated some sharp curvature. The final result of the improvement is an asphaltic concrete pavement 20 feet wide capable of withstanding the increasingly heavy traffic loads to which it is subjected.

Also during the biennium work was done on the Barnes County Road between the Sunset Highway and the Multnomah County Line and on the Cornell County Road between McDaniel Road and the Multnomah County Line. The construction consisted of widening work on both sections to provide for a 20-foot asphaltic concrete pavement with an additional 2 feet of pavement on the inside of all curves having a degree of curvature of 10 degrees or more.

Yamhill County: A 234-foot reinforced concrete deck girder bridge was constructed over Willamina Creek on the Willamina-Coast Creek County Road about 5 miles north of Willamina to

replace an old steel truss and framed trestle bridge. Grading and surfacing of the approaches was done by Yamhill county.

Expenditures made during the biennium for construction of projects on County Roads, not on either of the two state highway systems, amounted to $5,362,110.

City Allotment Fund Projects

During 1953 and 1954, construction work was performed on city streets in 45 cities throughout the state. These city projects were paid for out of state funds apportioned by legislative act for use at the rate of $250,000 per year in improving city streets not on either of the two state highway systems.

During the biennium 6.85 miles of grading, 8.72 miles of rock base and surfacing, 0.30 miles of bituminous macadam surfacing and 12.78 miles of asphaltic concrete pavement were completed. In connection with the above, new concrete curb construction and new storm sewer installations were required in many instances.

The cities in which the completed projects occurred are as follows: Amity, Bay City, Beaverton, Brookings, Brownsville, Burns, Canby, Carlton, Condon, Detroit, Drain, Empire, Gervais, Glendale, Gold Hill, Heppner, Hubbard, Lafayette, Lakeview, Long Creek, Lostine, Merrill, Milton-Freewater, Molalla, Monument, Myrtle Creek, Myrtle Point, Nyssa, Oakland, Oakridge, Philomath, Redmond, Reedsport (2 projects), Riddle, St. Helens, Sandy, Sheridan, Siletz, Sutherlin, Turner, Umatilla, Union, Waldport and Weston.

Lakeside Overcrossing and bridge over Tenmile Creek on U. S. 101 north of Coos Bay, a Forest Highway Project.

CLASSES OF HIGHWAYS

The classes of highways with which the Highway Commission is normally concerned, and in connection with which it normally expends the state and federal funds which are entrusted to it, are as follows:

1. Primary State Highways
2. Secondary State Highways
3. Federal-aid Primary Highways
4. Federal-aid Interstate Highways
5. Federal-aid Urban Highways
6. Federal-aid Secondary Highways
7. Public Lands Highways
8. Federal Forest Highways
9. County Roads

Classification of highways as above indicated is made necessary by the several plans of highway financing that have been developed during the years by the State and Federal Governments. Each plan of financing limits itself to particular highways or kinds of highways and thus establishes a new classification. It is possible for a highway to be in two or more classes. For instance, a primary state highway may also be a primary federal-aid highway. Likewise, a road may be both a county road and a secondary federal-aid highway.

Brief descriptions of these several different classes of highways are given in the paragraphs which follow:

Primary and Secondary State Highways: State highways are those highways for which the State has assumed the responsibilities of maintenance and improvement. In the beginning, all state highways were of the same class, but when the point was reached where the system included a complete network of the main arterial highways, it became desirable to have a separate system for highways which serve as feeders to the main network rather than as main lines. The main arterial system was, therefore, designated the Primary State Highway System, and a second system, called the Secondary State Highway System, was set up to receive such additional highways as might not be considered of sufficient importance to justify inclusion in the Primary System.

Additions to the Primary System may be made by the state legislature or by the State Highway Commission. Additions to the Secondary System may be made by joint action of the State Highway Commission and the county court of the county in which the highway is situated. The conditions under which state moneys may be expended on primary and secondary highways are the same for both classes. Counties bear no financial responsibility for the maintenance or improvement of either class.

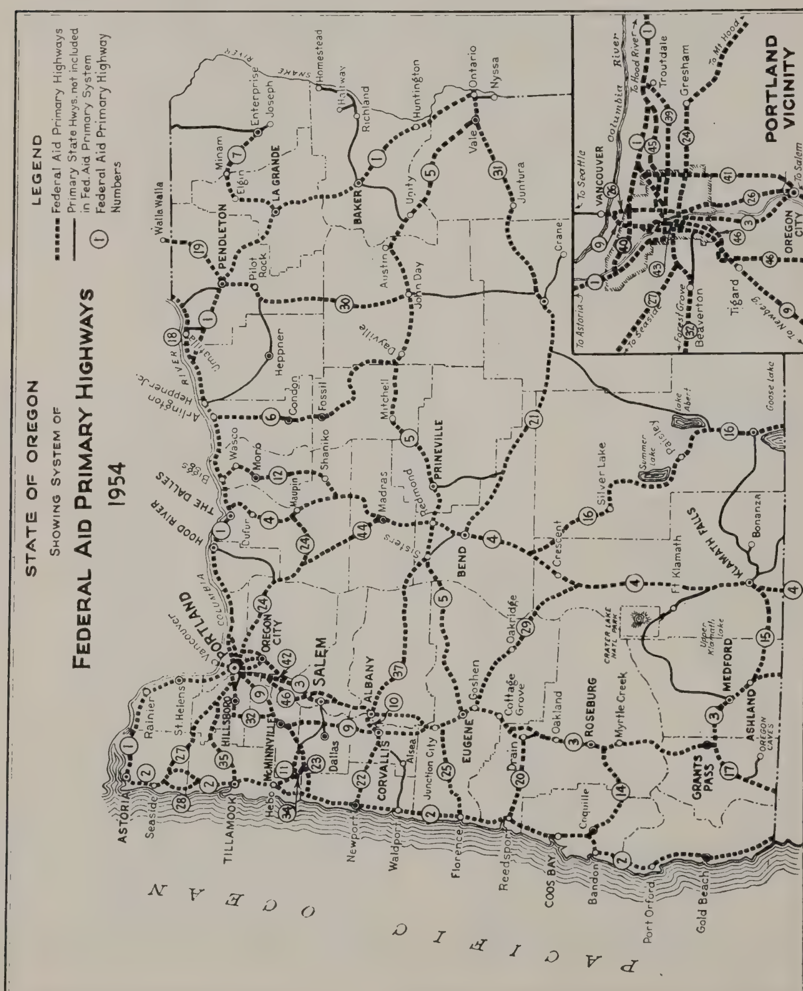


TABLE III

Federal Aid Primary Highway System

Federal Route No.	Highway	Total Federal Aid Mileage Inclusive of Miles Within Reservations	Mileage Within National Forests	Mileage Within Indian Reservations	Total Federal Aid Mileage Exclusive of Miles Within Reservations
1	Astoria to Ontario	474.0	29.6	* 24.4	420.0
2	Oregon Coast	389.9	46.4	† 0.3	343.2
3	Pacific	313.2	7.5	.....	305.7
4	The Dalles-California	287.4	19.5	50.1	217.8
5	Eugene to Ontario	384.8	86.0	.....	298.8
6	Arlington to Rock Creek	123.6	.....	.....	123.6
7	La Grande to Enterprise	65.9	.....	.....	65.9
9	Pacific West	100.9	.....	.....	100.9
10	Albany-Corvallis	8.5	.....	.....	8.5
11	McMinnville-Tillamook	48.7	13.4	.....	35.3
12	Sherman	69.0	.....	.....	69.0
14	Coos Bay-Roseburg	61.8	.....	.....	61.8
15	Green Springs	58.6	1.6	.....	57.0
16	Fremont	158.3	14.3	.....	144.0
17	Redwood	42.3	0.9	.....	41.4
18	Boardman to Wallula	37.7	.....	.....	37.7
19	Pendleton to Washington State Line	36.5	.....	.....	36.5
20	Umpqua	58.6	0.6	.....	58.0
21	Bend to Burns	130.5	.....	.....	130.5
22	Corvallis-Newport	55.9	.....	.....	55.9
23	Salmon River	21.9	.....	.....	21.9
24	Portland to Maupin	92.5	37.0	.....	55.5
25	Siuslaw	67.3	17.6	.....	49.7
26	East Portland-Oregon City	6.9	.....	.....	6.9
27	Sunset	59.5	.....	.....	59.5
28	Cannon Beach Road	21.0	.....	.....	21.0
29	Willamette	87.2	64.1	.....	23.1
30	Pendleton-John Day	120.5	16.7	.....	103.8
31	Burns to Vale	115.0	.....	.....	115.0
32	Tualatin Valley	39.0	.....	.....	39.0
34	Boyer-Dolph	5.6	4.9	.....	0.7
35	Tillamook to Banks	54.3	.....	.....	54.3
37	Santiam	101.2	53.5	.....	47.7
39	Base Line Road	8.4	.....	.....	8.4
40	Lombard Street (urban)	.....	.....	.....	.....
41	82nd Avenue	7.6	.....	.....	7.6
42	West Portland-Hubbard	5.6	.....	.....	5.6
43	Front Ave., Portland (urban)	.....	.....	.....	.....
44	Warm Springs	46.4	7.0	27.0	12.4
45	Banfield Expressway (urban)	.....	.....	.....	.....
46	Portland-Salem Exressway	44.9	.....	.....	44.9
	Totals	3,810.9	420.6	101.8	3,288.5

* Includes 2.2 miles in Celilo Canal Reserve.
† Cape Perpetua Lighthouse Reserve.
(All mileages are exclusive of mileage in Federal Aid Urban System.)

The present mileage of Primary State Highways is 4,836.78. The present mileage of Secondary State Highways is 2,567.90. Complete listings of the highways included in the primary and secondary systems are given in Tables 29 and 32 in Section Three of this report. A small-scale map showing the highways which comprise the two systems is also included in Section Three.

Listings of expenditures made on the primary and secondary state highways appear in Tables 11 to 16, inclusive, in Section Three.

Federal-aid Primary Highways: Federal-aid primary highways are those highways which have been designated by mutual agreement between the Highway Commission and the Federal Bureau of Public Roads as highways eligible to have primary federal-aid funds expended upon them. It is intended that these highways be the main highways of the State and that, in combination, they comprise a complete network serving all county seats and the larger centers of population.

Federal-aid primary funds allotted to the State of Oregon for use on federal-aid primary highways for the fiscal years 1946 to 1957 were as follows:

Fiscal year 1946	$3,728,908
Fiscal year 1947	3,728,403
Fiscal year 1948	3,683,994
Fiscal year 1949	None
Fiscal year 1950	3,330,486
Fiscal year 1951	3,325,613
Fiscal year 1952	3,838,173
Fiscal year 1953	3,798,278
Fiscal year 1954	4,198,212
Fiscal year 1955	4,209,393
Fiscal year 1956	5,398,620
Fiscal year 1957 (approx.)	5,400,000

A complete listing of the federal-aid primary highways in Oregon is given in Table III in Section Two of this report.

The total mileage of highways of this class is limited to eight per cent of the total mileage of public roads in existence in 1921, which places the limit for the State of Oregon at 3,346.1 miles, exclusive of miles within national forests and

other federal reservations and exclusive of miles within urban areas. In the system as now approved, the mileage, exclusive of miles in national forests and other reservations and in urban areas, is 3,289. The mileage in national forests and other reservations is 522. The mileage in urban areas is approximately 201.

Federal-aid Interstate Highways: Federal-aid Interstate Highways are those federal-aid primary highways which have been selected to form a National System of Interstate Highways not exceeding 40,000 miles in total extent, connecting the principal metropolitan areas, cities and industrial centers in the Nation.

Interstate Highways in Oregon are (1) the Pacific Highway from the Washington state line north of Portland to the California state line south of Ashland and (2) the Columbia River Highway and Old Oregon Trail from Portland east to the Idaho state line near Ontario. The total mileage of Interstate Highways in Oregon is 710.

The first authorization of federal-aid funds for use on Interstate Highways was made for the fiscal year 1954. Oregon's allotment for that year was $427,813. Allotments for subsequent years have been as follows:

Fiscal year 1955	$ 428,962
Fiscal year 1956	2,330,696
Fiscal year 1957 (approx.)	2,330,000

Federal-aid Urban Highways: Federal-aid Urban Highways are those highways and streets within the "urban areas" of cities having populations greater than 5,000, which have been designated as highways and streets eligible to have federal-aid urban funds expended on them. The roads and streets so designated for an urban area comprise what is called the "urban system" for that area.

An urban area is defined as an area within which is included a city having a population of 5,000 or more, the boundaries of which are as designated by the highway department of the state in which it is located, with approval of the Federal Bureau of Public Roads, such area being intended to include only such areas outside of the city as are developed for urban purposes.

In Oregon, there are 24 cities having populations of 5,000 or more. Accordingly, there are 24 urban areas. The boundaries of these areas as at present fixed by the Highway Department are, in most cases, the same as the corporate limits of the cities. Urban highway systems have been officially designated for the Portland, Salem, Roseburg, Corvallis, Pendleton, Ashland, Klamath Falls and Hillsboro areas. Systems for the other 16 areas will be designated as occasion requires. In general, the urban systems will comprise the urban portions of the federal-aid primary highways which pass through the respective urban areas. Initial estimates of the mileages of federal-aid urban highways in the 24 areas are as follows:

Albany	2.83	Lebanon	1.53
Ashland	4.02	McMinnville	2.27
Astoria	6.16	Medford	2.25
Baker	3.94	Milwaukie	0.57
Bend	4.41	North Bend	2.80
Coos Bay	2.46	Oregon City	2.64
Corvallis	5.19	Pendleton	6.47
Eugene	5.97	Portland	114.04
Grants Pass	1.80	Roseburg	8.53
Hillsboro	2.16	Salem	7.13
Klamath Falls	7.95	Springfield	2.24
La Grande	2.04	The Dalles	1.94
		Total	201.34

Federal funds allotted to Oregon for use on federal-aid urban highways are as follows:

Fiscal year 1946	$ 810,873
Fiscal year 1947	810,873
Fiscal year 1948	800,477
Fiscal year 1949	None
Fiscal year 1950	720,430
Fiscal year 1951	720,430
Fiscal year 1952	978,287
Fiscal year 1953	970,723
Fiscal year 1954	1,076,050
Fiscal year 1955	1,081,596
Fiscal year 1956	1,387,166
Fiscal year 1957 (approx.)	1,385,000

Federal-aid Secondary Highways: Federal-aid Secondary Highways are those highways which comprise the Federal-aid Secondary Highway System and are, therefore, eligible to have federal-aid secondary highway funds used in their improvement. Designations of highways of this class are made by the state highway departments acting in cooperation with the county commissioners or other appropriate local road officials and the Commissioner of Public Roads. They are intended to be principal secondary and feeder roads, including farm-to-market roads, rural free delivery mail routes, and public-school bus routes, either outside of municipalities or inside of municipalities of less than five thousand population.

There is no limitation on the mileage of highways that may be designated Federal-aid Secondary Highways except that the total mileage should be no greater than can be improved within a reasonable period of time. The mileage is expected to include county roads as well as state roads, but no ratio as between mileage of county roads and mileage of state roads is specified. However, it is the present practice of the Bureau of Public Roads to require that no less than 50 per cent of a state's allocation of federal-aid secondary funds be used on the county roads included in the secondary system.

In Oregon, the Federal-aid Secondary Highway System comprises 3,249 miles of state roads and 1,718 miles of county roads. A listing of the highways which comprise the system is given in accompanying Table IV.

Federal-aid funds allotted to the State of Oregon for use on federal-aid secondary highways for the fiscal years 1946 to 1957 were as follows:

Fiscal year 1946	$2,544,582
Fiscal year 1947	2,544,245
Fiscal year 1948	2,513,880
Fiscal year 1949	None
Fiscal year 1950	2,272,391
Fiscal year 1951	2,269,150
Fiscal year 1952	2,681,041
Fiscal year 1953	2,653,463
Fiscal year 1954	2,933,480
Fiscal year 1955	2,941,860
Fiscal year 1956	3,772,987
Fiscal year 1957 (approx.)	3,770,000

Bullards Bridge across the Coquille River, a Federal-aid Secondary Project, Coos County.

TABLE IV

Secondary Federal-Aid Highway System

The mileages given in this table are inclusive of mileages within cities, towns and urban areas.

F. A. S. No.	Name	Termini	Length in Miles
100	Three Mile Lane	FA 9 in McMinnville-FA 9 at Dayton Junction	8.26
101	Yamhill-Newberg	FA 32 in Yamhill-FA 9 at Newberg	11.65
102	Silverton-Newberg	FAS 147 in Silverton-FA 9 in Newberg	32.04
103	Bellevue-Hopewell	FA 11 at Bellevue-FAS 116 east of Hopewell	14.89
104	Lafayette (Part Co. Rd.)	FAS 103 north of Hopewell-FAS 100 and 105 west of Dayton	6.25
105	Amity-Dayton	FA 9 north of Amity-FAS 100 east of McMinnville	7.03
108	Springbrook-Chehalem Mt. (Co. Rd.)	FA 9 northeast of Newberg-FAS 650 near Chehalem Mt.	2.95
109	Carlton-Chehalem Creek (Co. Rd.)	FA 32 in Carlton-FAS 101 northwest of Newberg	5.68
110	Pike-Yamhill (Co. Rd.)	Pike-FA 32 in Yamhill	4.79
111	McMinnville-Carlton (Co. Rd.)	FAS 112 north of McMinnville-FA-32 in Carlton	6.39
112	Baker Creek-McMinnville (Co. Rd.)	Baker Creek-FA 9 in McMinnville	6.85
113	Gopher Valley (Co. Rd.)	FA 11 east of Sheridan-Gopher Valley	4.50
114	Willamina-Coast Creek (Co. Rd.)	FA 11 in Willamina-Coast Creek	6.30
115	Mt. Hood	FA 24 near Government Camp-FA1 at Hood River	44.80
116	Salem-Dayton	U 280-123 in Salem-FAS 100 in Dayton	20.17
117	Marquam-Canby	FAS 140 west of Molalla-FA 3 at Canby	8.02
118	Wilhoit-Molalla-Liberal (Co. Rd.)	Wilhoit-FAS 147 at Liberal	9.09
119	Milwaukie-Gladstone (Co. Rd.)	Milwaukie-FA 41 in Gladstone	4.79
120	West Linn-Oswego-Wilsonville Road (Co. Rd.)	FA 3 in West Linn-FAS 122 southwest of Oswego	5.82
121	North Santiam	FAS 127 west of Shaw-FA 37 at Santiam Junction	78.00
122	Newberg-Wilsonville-Oswego (Co. Rd.)	FA 9 northeast of Newberg-FA 3 at Oswego	23.19
123	Salem-Dallas	FAS 190 in Dallas-U 280-123 in Salem	13.37
124	Mehama-Mill City	FAS 121 at Mehama-FAS 121 at Mill City	8.78
125	Jefferson	FA 3 southwest of Jefferson-FA 3 at Steiwer Hill	8.23
126	Greensbridge-Scio (Co. Rd.)	FAS 125 at Jefferson-FAS 220 at Scio	9.11
127	Silver Creek Falls	U 280-003 in Salem-FAS 147 in Silverton	40.50
128	Yergen Corner-Aurora (Co. Rd.)	FAS 102 south of Newberg-FAS 622 at Aurora	11.33
129	Clackamas-Boring (Part Co. Rd.)	FA 41 at Clackamas-FA 24 northwest of Sandy	12.50

TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
130	Sublimity-Silverton (Co. Rd.)	FAS 121 in Sublimity-FAS 147 in Silverton	13.20
131	Parkplace-Springwater (Co. Rd.)	FA 41 at Parkplace-FAS 140 at Springwater	19.36
132	Clackamas-Eagle Creek	FAS 129 east of Clackamas-FAS 141 at Eagle Creek	10.05
137	Dallas-Coast	FA 11 east of Valley Junction-FAS 123 in Dallas	14.83
138	Monmouth-Independence	FA 9 in Monmouth-FAS 142 and FAS 193 in Independence	2.35
139	Monmouth	FAS 190 south of Dallas-FA 9 in Monmouth	7.20
140	Woodburn-Sandy (Part Co. Rd.)	FA 3 north of Woodburn-FA 24 east of Sandy	47.64
141	Eagle Creek-Sandy	FA 24 in Sandy-FAS 140 southeast of Eagle Creek	6.94
142	Independence	FAS 138 in Independence-FAS 123 west of Eola	6.38
144	Alsea	FA 2 at Waldport-FA 22 near Philomath	59.11
145	Eddyville-Blodgett	FA 22 near Blodgett-Nashville	7.57
146	Otis-Rose Lodge (Co. Rd.)	FA 2 at Otis, FA 23 at Rose Lodge	4.10
147	Salem-Oregon City (Part Co. Rd.)	U 280-003 in Salem-FA 41 at Oregon City	41.98
149	Schooner Creek (Co. Rd.)	FA 2 at Taft-Schooner Creek	2.57
150	Siletz-Orton (Co. Rd.)	FAS 196 at Siletz-Orton	8.00
151	Harlan-Burnt Woods (Co. Rd.)	Harlan-FA 22 at Burnt Woods	8.05
152	Yachats River (Co. Rd.)	FA 2 at Yachats-Yachats River	7.25
159	Salem-Brassel Corner (Co. Rd.)	U280-123 in Salem-FAS 102 northwest of Woodburn	16.67
176	Independence-Salem (Co. Rd.)	FAS 193 in Independence-U 280-003 in Salem	10.62
190	Kings Valley	FA 22 near Wren-FAS 123 in Dallas	28.17
193	Granger (Co. Rd.)	FA 10 near Albany-FAS 138 and FAS 142 in Independence	18.39
196	Siletz	FA 22 near Toledo-FA 2 at Kernville	31.73
200	Monroe-Cheshire	FA 9 in Monroe-FA 25 at Cheshire	8.66
201	Cheshire-Anlauf	FA 25 near Cheshire to FA 20 at Anlauf	37.63
202	Corvallis-Eastside	U 080-009 in Corvallis to FA 3 at Albany	10.30
205	Granger-Wells (Co. Rd.)	FA 10 at Granger-FAS 193 near Wells	5.33
206	Beaver Creek-Greenberry (Co. Rd.)	Beaver Creek-FA 9 near Greenberry	5.80
207	Dawson-Bellfountain (Co. Rd.)	Dawson-FA 9 near Monroe	6.78
208	Albany Airport	FA 37 near Albany-FA 3 at Albany Airport	1.07
210	Eugene-Harrisburg (Co. Rd.)	FA 3 in Eugene-FA 3 in Harrisburg	19.08
212	Lebanon-Crabtree Corner (Co. Rd.)	FA 37 in Lebanon-FAS 220 east of Crabtree	7.78
213	Brewster-Lacomb (Co. Rd.)	FAS 212 near Lebanon-Lacomb	6.60
214	Lebanon-Berlin (Co. Rd.)	FAS 212 near Lebanon-Berlin	9.07
215	Halsey-Sweet Home	FA 2 in Halsey-FA 37 in Sweet Home	21.51
216	Orleans-Lebanon (Co. Rd.)	FAS 202 at Orleans-FA 37 in Lebanon	15.15
217	Sweet Home-Foster (Co. Rd.)	FA 37 at Sweet Home-FA 37 at Foster	5.77

TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
218	Holley-Rice School (Co. Rd.)	FAS 215 near Holley-Rice School	4.78
219	Junction City-Eugene	FA 3 in Eugene-FA 3 in Junction City	13.52
220	Albany-Lyons	FA 37 east of Albany-FAS 124 at Lyons	24.68
221	Creswell-Pleasant Hill	FA 3 at Creswell-FA 29 near Pleasant Hill	7.51
222	Springfield-Pleasant Hill	FA 29 near Pleasant Hill-FA 5 near Springfield	8.00
223	Fox Hollow	FA 3 near Walker-FA 3 in Eugene	15.50
225	Alsea-Deadwood	FA 25 near Swisshome-Paris	18.77
226	Canary (Co. Rd.)	FA 2 near Florence-Canary	5.35
227	Junction City-Lewis Ranch (Co. Rd.)	FA 3 in Junction City-Lewis Ranch	6.20
228	Eugene-Marcola (Co. Rd.)	FAS 210 near Eugene-Marcola	17.00
229	Eugene-Gillespie Corner (Co. Rd.)	FA 3 in Eugene-FAS 200 at Gillespie Corner	16.30
230	Jasper-Lowell (Co. Rd.)	FA 29 at Lowell-FAS 222 at Jasper	11.36
231	Cottage Grove-Culp Creek (Co. Rd.)	FA 3 in Cottage Grove-Culp Creek	16.36
232	Sutherlin-Elkton	FA 3 in Sutherlin-FA 20 at Elkton	25.74
233	Sutherlin	FAS 232 near Sutherlin-FA 3 near Sutherlin	1.69
234	Tiller-Trail	FA 3 at Canyonville-FAS 269 at Trail	50.36
236	West Diamond Lake	FAS 269 near Union Creek-M. P. 9	9.00
238	Mapleton-Eugene	FA 25 at Mapleton to FA 3 in Eugene	48.03
239	Yoncalla-Scotts Valley (Co. Rd.)	FA 3 near Yoncalla-Scotts Valley	8.09
240	Sutherlin-Nonpareil (Co. Rd.)	FA 3 in Sutherlin-Nonpareil	10.04
241	Roseburg-Cleveland (Co. Rd.)	U 270-241 in Roseburg-Cleveland	11.13
243	Azalea-Anchor (Co. Rd.)	FA 3 at Azalea-Anchor	6.30
244	Riddle (Co. Rd.)	FA 3 near Myrtle Creek-Riddle	2.83
245	Glendale (Co. Rd.)	FA 3 northeast of Glendale-Glendale	11.25
246	Empire-Coos Bay	FAS 263 near Empire-FA 2 in Coos Bay	3.55
247	Powers	Powers-FA 14 near Myrtle Point	18.62
248	Lakeside (Co. Rd.)	Lakeside-FA 2 near Lakeside	1.01
249	Jordan Paint (Co. Rd.)	FA 2 at Coos Bay Bridge-Jordan Point	2.70
250	Coquille-Fairview (Co. Rd.)	State Highway No. 9 in Coquille-Fairview	9.01
251	Myrtle Point-Coquille (Co. Rd.)	FA 14 at Myrtle Point-FA 14 near Coquille	13.36
252	Myrtle Point-Gravelford (Co. Rd.)	FA 14 at Myrtle Point-Gravelford	8.17
253	North Umpqua (Co. Rd.)	U 270-253 in Roseburg-Rock Creek	21.61
255	Enegren Ferry-Delwood (Co. Rd.)	FAS 262 at Lillian Canal-Delwood	10.23
256	Port Orford	FA 2 at Port Orford-U. S. Coast Guard Station	0.79
257	Sixes-Dry Creek (Co. Rd.)	FA 2 at Sixes-County Road at Dry Creek	5.19
258	Gold Beach-Bagnall Ferry (Co. Rd.)	FA 2 at Gold Beach-Bagnall Ferry	4.78

TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
259	North Side Chetco River (Co. Rd.)	FA 2 at Brookings-County Road near Mill Creek	5.80
260	Oregon Caves	FA 17 at Cave Junction-Oregon Caves National Monument	19.70
261	Rogue River Loop	FA 17 near Wilderville-FA 3 in Grants Pass	22.42
262	Coos River	FA 2 near Coos Bay-County Road near Allegany	19.03
263	Cape Arago	Cape Arago State Park-FA 2 in North Bend	14.25
264	Grants Pass-West (Co. Rd.)	FAS 261 west of Grants Pass-FAS 261 near Grants Pass	4.84
265	Merlin-Hugo (Co. Rd.)	FA 3 near Grants Pass-FA 3 near Hugo	11.61
266	Wilderville-Grants Pass (Co. Rd.)	FA 17 at Wilderville-FAS 280 near Grants Pass	9.76
267	Holland Loop (Co. Rd.)	FAS 260 near Cave Junction-FAS 260 north of Holland	7.96
268	Medford-Provolt	FAS 280 at Provolt-FA 3 in Medford	25.42
269	Crater Lake	FA 3 near Medford-Crater Lake National Park	66.55
271	Sams Valley	FA 3 in Gold Hill-FAS 269 near Trail	15.03
273	Medford-Sams Valley (Co. Rd.)	FA 3 near Medford-FAS 271 in Sams Valley	12.06
274	Jacksonville-Central Point (Co. Rd.)	FAS 268 in Jacksonville-FAS 269 north of Medford	9.54
276	Rogue River-Wimer (Co. Rd.)	FA 3 at Rogue River-County Road at Wimer	8.06
277	Dead Indian (Co. Rd.)	FA 15 near Ashland-County Road near Frog Creek	6.58
278	Phoenix-Voorhies (Co. Rd.)	FA 3 in Phoenix-FA 3 near Medford	3.00
280	Williams	County Road near Williams-FA 3 near Grants Pass	23.13
287	Butte Falls (Co. Rd.)	FAS 269 south of Trail-Butte Falls	15.67
288	Little Butte	FAS 269 in Eagle Point-Lakecreek	11.76
300	Odell	FAS 115 near Odell-FAS 356 near Van Horn	3.43
301	Schenck Corner-Van Horn (Co. Rd.)	FAS 300 near Odell-FAS 115 near Van Horn	1.92
302	Cider Mill-Rockford (Co. Rd.)	County Road near Oak Grove-FA 1 near Hood River	4.61
303	Windmaster Corner-Oak Grove (Co. Rd.)	FAS 302 in Oak Grove-FAS 356 near Hood River	2.10
305	Odell School-Fikes Crossing (Co. Rd.)	FAS 356 near Summit-FAS 300 near Odell	2.04
306	Dee-Lost Lake Road (Co. Rd.)	FAS 356 at Dee-County Road southwest of Dee	2.25
307	Sherars Bridge	FA 4 near Tygh Valley-FA 12 at Grass Valley	28.64
308	Shaniko-Fossil	FA 12 at Shaniko-FA 6 in Fossil	43.45
309	Mill Creek-The Dalles (Co. Rd.)	County Road near Mill Creek-FAS 365 in The Dalles	8.23

TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
310	Dufur-Atkinson Ranch (Co. Rd.)	FA 4 at Dufur-FA 4 near Boyd	5.08
311	Pinehurst School-Tygh Valley (Co. Rd.)	County Road near Pinehurst School-FA 4 at Tygh Valley	7.37
312	Bakeoven Road (Co. Rd.)	FA 4 at Maupin-County Road east of Maupin	5.06
313	Rufus-Scott Canyon (Co. Rd.)	FA 1 at Rufus-Klondike Junction	2.91
316	Service Creek-Mitchell	FA 5 at Mitchell-FA 6 at Service Creek	24.85
317	Hardman	FAS 378 southwest of Heppner-County Road southeast of Hardman	14.74
318	Waterman-Spray (Co. Rd.)	County Road at Waterman-FA 6 at Spray	13.00
319	McKenzie-Bend	FA 4 near Bend-FA 5 near Sisters	18.54
320	O'Neil	FA 4 at Prineville Junction-FA 5 at Prineville	17.71
321	Crooked River	County Road southeast of Prineville-FA 5 in Prineville	21.50
322	Terrebonne-O'Neil (Co. Rd.)	FA 4 at Terrebonne-FAS 400 west of Prineville	4.86
324	Cline Falls	FAS 319 at Tumalo-FA 5 near Cline Falls	10.54
325	Tumalo-Deschutes (Part Co. Rd.)	FAS 324 at Tumalo-County Road at Deschutes	4.18
326	Redmond-Bend	FAS 319 near Bend-FA 4 at Redmond	13.26
327	Cloverdale-South (Co. Rd.)	FAS 319 near Sisters-FA 5 at Cloverdale	4.50
329	Gerkhing Corner-North (Co. Rd.)	FAS 319 northwest of Tumalo-FAS 319 at Tumalo	5.90
330	Carroll Acres-Southeast (Co. Rd.)	FA 4 near Bend-southeast to County Road	2.53
356	Hood River	FAS 115 near Parkdale-FA 1 in Hood River	17.28
365	Chenoweth Creek (Co. Rd.)	FA 1 in The Dalles-County Road near Chenoweth Creek	3.59
369	Petersburg-Fairbanks (Co. Rd.)	FA 4 near Petersburg-County Road at Fairbanks	5.92
378	Wasco-Heppner (Part Co. Rd.)	FA 1 near Sherman-FAS 439 at Heppner	99.14
385	Madras-Prineville	FA 5 in Prineville-FA 4 near Madras	26.39
390	Fossil-Kinzua (Co. Rd.)	FA 6 near Fossil-County Road near Kinzua	7.06
395	Lower Bridge-Terrebonne (Co. Rd.)	County Road near Lower Bridge-FA 4 near Terrebonne	6.28
397	Bend-Butler Ranch (Part Co. Rd.)	FA 21 in Bend-FAS 398 east of Bend	8.33
398	Alfalfa (Part Co. Rd.)	FA 21 near Bend-County Road near Alfalfa	10.35
400	Long Pine School (Co. Rd.)	FAS 320 near O'Neil-one mile south of Jefferson County line	4.20

TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
401	Prineville-McKay Creek (Co. Rd.)	FA 5 in Prineville-Upper McKay Creek	9.00
402	Prineville-Davis Ranch	FAS 403-FA 5 near Prineville	16.45
403	Paulina	FAS 402-Paulina	39.57
404	Powell Butte	FA 5 west of Powell Butte-FAS 542 south of Powell Butte	5.72
405	Lakeview-Burns	FA 16 at Valley Falls-FA 21 at Okerman Ranch	90.10
406	Warner Valley	FA 16 near Lakeview-Plush	45.97
407	West Side (Co. Rd.)	County Road near West Side-FAS 410 west of Lakeview	8.05
408	Cottonwood Creek (Co. Rd.)	FAS 410 west of Lakeview-FAS 407	6.75
410	Klamath Falls-Lakeview	FA 4 in Klamath Falls-FA 16 in Lakeview	95.81
411	Maddox Corner-Thomas Creek (Co. Rd.)	FAS 410 west of Lakeview-north to Thomas Creek	5.29
414	Fort Rock (Co. Rd.)	FA 16 west of Fort Rock-Fort Rock	6.73
416	Dairy-Bonanza	FAS 410 at Dairy-FAS 430 at Bonanza	6.97
417	Bonanza-Malin (Co. Rd.)	FAS 419 west of Malin-FAS 416 in Bonanza	14.88
418	Bonanza-Lorenz Mill (Co. Rd.)	FAS 416 in Bonanza-FAS 410 at old Lorenz Mill	7.80
419	Klamath Falls-Malin	FAS 410 east of Klamath Falls-Oregon-California line	27.09
420	Klamath Lake	FAS 4 in Klamath Falls-FAS 541 at Fort Klamath	48.07
421	Chiloquin-Southwest	FAS 541 near Lobert-FAS 424 at Chiloquin	2.96
422	Malone (Co. Rd.)	FAS 419 east of Merrill-Oregon-California line	1.75
423	Hatfield	FAS 419 east of Merrill-Oregon-California line	2.51
424	Klamath Agency-Chiloquin	FAS 541 south of Klamath Agency-Chiloquin	4.42
425	Modoc Point	FA 4 at Modoc Point-FAS 541 south of Klamath Agency	12.90
427	Midland	FA 33 north of Midland-FAS 410 at Altamont	5.79
428	Lower Klamath	FA 33 south of Midland-FAS 419 west of Dehlinger	7.02
429	Sprague River (Co. Rd.)	Sprague River-FAS 410 west of Beatty	9.50
430	Bonanza-Langell Valley (Co. Rd.)	FAS 417 south of Bonanza-Lorella-FAS 416 in Bonanza	19.20
431	Olene-Poe Valley (Co. Rd.)	FAS 410 near Olene-FAS 417 south of Bonanza	9.62
432	Keno-Worden (Co. Rd.)	FA 33 near Worden-FA 15 at Keno	7.67
433	Hermiston	FAS 443 west of Echo-FAS 462 in Hermiston	10.48
434	Altamont-Mock Corner (Co. Rd.)	FAS 428, 3 miles west of Dehlinger-FAS 427 south of Klamath Falls	6.08
437	Kimberly-Long Creek (Part Co. Rd.)	FA 6 at Kimberly-3 miles east of Malheur National Forest Boundary	45.32

TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
439	Heppner	FA 1 at Heppner Junction-FA 30 at Nye	84.37
440	Mikkalo (Co. Rd.)	FA 6 near Olex-Mikkalo	2.22
441	Lonerock (Co. Rd.)	Lonerock-FAS 378 east of Condon	16.49
443	Lexington-Echo	FAS 439 at Lexington-FA 1 east of Echo	39.36
444	Morgan Ranch-Ione Co. (Co. Rd.)	Morgan Ranch-FAS 439 at Ione	9.31
447	John Day-Burns	FA 31 north of Burns-FA 5 in John Day	68.11
448	Austin Spur	FA 5 south of Austin-Austin	2.69
449	Beech Creek	FA 5 at Mt. Vernon-FA 30 northwest of John Day	5.35
450	Frenchglen	FAS 457 east of Burns-Frenchglen	62.00
452	Prairie City-Blue Mountain Springs (Co. Rd.)	FA 5 in Prairie City-Blue Mountain Springs	11.85
453	Logdell (Co. Rd.)	Logdell-FAS 447 north of Seneca	8.01
454	Hermiston-Cold Springs	FAS 462 in Hermiston-FA 18 near Cold Springs	7.38
455	Rome-Princeton	FAS 456 north of Princeton-FAS 513 near Rome	61.71
456	Diamond Valley (Part Co. Rd.)	FAS 457 near Crane-FAS 450 at Grain Camp	48.06
457	Burns-Crane	FA 21 in Burns-Crane	28.91
458	Drewsey-Van (Co. Rd.)	Van-FA 31, 2.5 miles south of Drewsey	25.00
459	Silvies River (Co. Rd.)	FA 31 in Burns-Silvies River	4.48
461	Pendleton-Cold Springs	U 250-001 in Pendleton-FA 18 at Cold Springs	30.88
462	Stanfield-McNary Dam	FA 1 south of Stanfield-FA 18 near McNary Dam	11.64
463	Ordnance Depot	FA 1 south of Ordnance-Ordnance Depot	0.41
464	Umapine	FA 19 north of Milton-Freewater-Oregon-Washington line north of Umapine	7.25
465	Athena-West	FA 19 in Athena-FAS 467, 2 miles south of Helix	7.98
466	Myrick	FAS 461 southeast of Holdman-FAS 467, 3 miles south of Helix	8.46
467	Havana-Stanton (Part Co. Rd.)	Half mile north FA 19 at Havana-Stanton	14.43
469	Weston-Elgin	FA 19 at Weston-FA 7 at Elgin	41.39
470	Stanfield-Pendleton	FA 1 south of Stanfield-FA 1 near Pendleton	24.65
471	Milton-South Fork Walla Walla River (Co. Rd.)	FA 19 in Milton-Power Plant	6.77
472	Cayuse-Adams (Co. Rd.)	FAS 473 at Cayuse-FA 19 at Adams	15.29
473	Mission-Adams (Co. Rd.)	FA 1 near Mission-FA 19 at Adams	12.93
474	Thorn Hollow-Athena (Co. Rd.)	FAS 472 southeast of Adams-FA 19 at Athena	8.02
475	Thompson Ranch-Mission (Co. Rd.)	Thompson Ranch-FA 1 near Mission	5.90
477	Ukiah-Hilgard	FA 30 near Ukiah-FA 1 near Hilgard	47.30
478	Mt. Glen (Co. Rd.)	FA 7 in La Grande-FAS 481 north of Island City	7.42

TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
479	Lower Cove (Co. Rd.)	FA 7 south of Alicel-FAS 483 at Cove	13.60
480	Enterprise-Wallowa Lake	FA 7 in Enterprise-south end Wallowa Lake	12.60
481	Island City-Imbler (Co. Rd.)	FA 7 at Island City-Summerville-FA 7 at Imbler	20.55
482	Little Sheep Creek	FAS 480 in Joseph-Imnaha	30.42
483	Cove	FAS 7 at Island City-Cove-FAS 545 at Union	22.16
484	Alder Slope (Co. Rd.)	County Road south of Enterprise-FAS 480 in Enterprise	4.03
485	Zumwalt (Co. Rd.)	FAS 480 north of Joseph-Crow Creek Road Junction	5.28
486	Medical Springs	FAS 505 near Baker-FAS 545 in Union	42.67
487	Whiskey Creek (Co. Rd.)	FA 7 in Wallowa-Junction with County Road northeast of Wallowa	7.19
488	North Powder River (Co. Rd.)	FAS 503 northwest of Haines-FA 1 in North Powder	4.90
489	Whiskey Creek-Lostine (Co. Rd.)	FAS 487 east of Wallowa-FA 7 in Lostine	7.88
490	Flora	FA 7 in Enterprise-Oregon-Washington line	43.77
491	Wallowa-Johnson Ranch (Co. Rd.)	FA 7 in Wallowa-FA 7 northwest of Wallowa	3.46
497	Hurricane Creek (Co. Rd.)	FAS 480 in Joseph-FAS 480 in Enterprise	7.38
500	Robinette	FAS 505 east of Richland-Brownlee	11.00
501	Baker-Unity	FA 5 north of Unity-FA 1 in Baker	46.10
502	Sumpter	Sumpter-FAS 501 at Salisbury	19.18
503	Haines-Anthony	FA 1 near Haines-Anthony Creek	11.30
504	Pine Creek	FAS 505 in Halfway-Long Branch Creek	3.72
505	Baker-Cornucopia	FA 1 in Baker-Cornucopia	71.41
506	Baker-Pine Creek-Wingville (Co. Rd.)	FA 1 in Baker-Pine Creek-Wingville-FA 1 northwest of Baker	13.44
507	Rock Creek (Co. Rd.)	FA 1 in Haines-Rock Creek-FAS 503 west of Haines	9.20
508	Muddy Creek (Co. Rd.)	FAS 503 northwest of Haines-FAS 507 north of Rock Creek	3.83
509	Keating (Co. Rd.)	FAS 505 south of Keating-Keating	3.36
510	New Bridge (Co. Rd.)	FAS 505 at Richland-New Bridge	2.41
511	Richland-South (Co. Rd.)	FAS 505 at Richland-Daly Creek	3.54
512	Halfway-North (Co. Rd.)	FAS 505 at Halfway-East Pine Creek	3.34
513	I. O. N.	Oregon-Nevada line at McDermitt-Oregon-Idaho line north of Jordan Valley	118.13
514	Cairo-Nyssa	Oregon-Idaho line at Nyssa-FA 5 at Cairo	8.64
515	East Cow Hollow (Co. Rd.)	FA 5 at Vale-FAS 518 at Owyhee	18.50
516	Weiser Spur	FA 1 south of Weiser-Oregon-Idaho line at Weiser	1.99
517	Payette Spur	Oregon-Idaho line at Payette-FA 1 north of Payette	1.67
518	Nyssa-Homedale	Idaho line 7 miles south of Adrian-FAS 514 in Nyssa	22.54

TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
519	Graham Boulevard	FA 31 south of Hope-FA 31 in Vale	10.72
520	Adrian-Parma	FAS 518 near Adrian east to Oregon-Idaho line	2.77
524	Jordan Valley	FAS 513 west of Jordan Valley-FAS 513 north of Jordan Valley	10.43
525	Westfall-Harper (Co. Rd.)	Westfall-FA 31 near Harper	13.00
527	Cox Corner-Ontario (Co. Rd.)	FA 5 west of Cairo-FA 5 near Ontario	6.76
528	Morgan Avenue-Ontario (Co. Rd.)	FA 514 south of Cairo-FA 5 in Ontario	6.51
529	Nyssa-Morgan Avenue (Co. Rd.)	FAS 514 at Nyssa-Morgan Avenue southwest of Cairo	6.10
530	Enterprise Avenue (Co. Rd.)	FAS 515 in East Cow Hollow-FAS 518 south of Nyssa	3.90
532	Oregon Trail School-Lapin Corner (Co. Rd.)	FAS 515 in Cow Hollow-FAS 518 near Kingman	2.30
533	Rock Spring Canyon (Co. Rd.)	Road Junction north of Mitchell Butte-FAS 515 west of Owyhee	4.00
535	Oregon Slope (Co. Rd.)	FA 1 five miles north of Payette Junction-FA 1 three miles north of Payette Junction	3.70
539	Sun Mountain	FA 4 east of Crater Lake-FAS 541 near Ft. Klamath	26.98
540	Adrian-Idaho	FAS 520 east of Adrian-southeast to Oregon-Idaho line	4.42
541	East Crater Lake	Crater Lake National Park-FA 4 near Lobert	20.15
542	Butler Ranch-Powell Butte	FAS 397 at Butler Ranch-FAS 404 south of Pilot Butte	9.48
544	Island City-South (Co. Rd.)	FA 7 in Island City south to FA 1	2.90
545	La Grande-North Powder	FA 1 near La Grande-FA 1 near North Powder	28.10
546	Gateway-Agency Plains (Co. Rd.)	FA 44 northwest of Madras-FA 4 southeast of Gateway	13.90
547	Culver-Juniper Butte (Co. Rd.)	FAS 549 at Culver-FA 4 near Juniper Butte	8.60
548	Metolius-Culver (Co. Rd.)	FAS 549 near Metolius-FAS 547 west of Culver	6.00
549	Culver	FA 4 at Madras-FA 4 southeast of Culver	11.64
550	Seven Devils (Co. Rd.)	FA 2 in Bandon-Bullards	3.10
551	Wilson River Loop (Co. Rd.)	Road Junction near the Wilson River south to FA 35 at the Fair Grounds	1.47
552	Rhea Creek (Co. Rd.)	FAS 439 at Jordan-FAS 378 near Rhea Creek	18.70
554	Powell Butte Junction-Alfalfa (Co. Rd.)	FAS 404 at Powell Butte Junction-398 at Alfalfa	8.25
555	Burgess (Co. Rd.)	FA 4 north of Lapine-the Deschutes National Forest Boundary	4.00
556	Ritter (Co. Rd.)	FA 30 north of Long Creek-Ritter	7.00
557	Frankton and Methodist Lane (Co. Rd.)	FA 1 near Hood River-Road Junction near Rockford	5.22
558	Thompson Creek (Co. Rd.)	FAS 268 at Applegate-Josephine County line	7.20

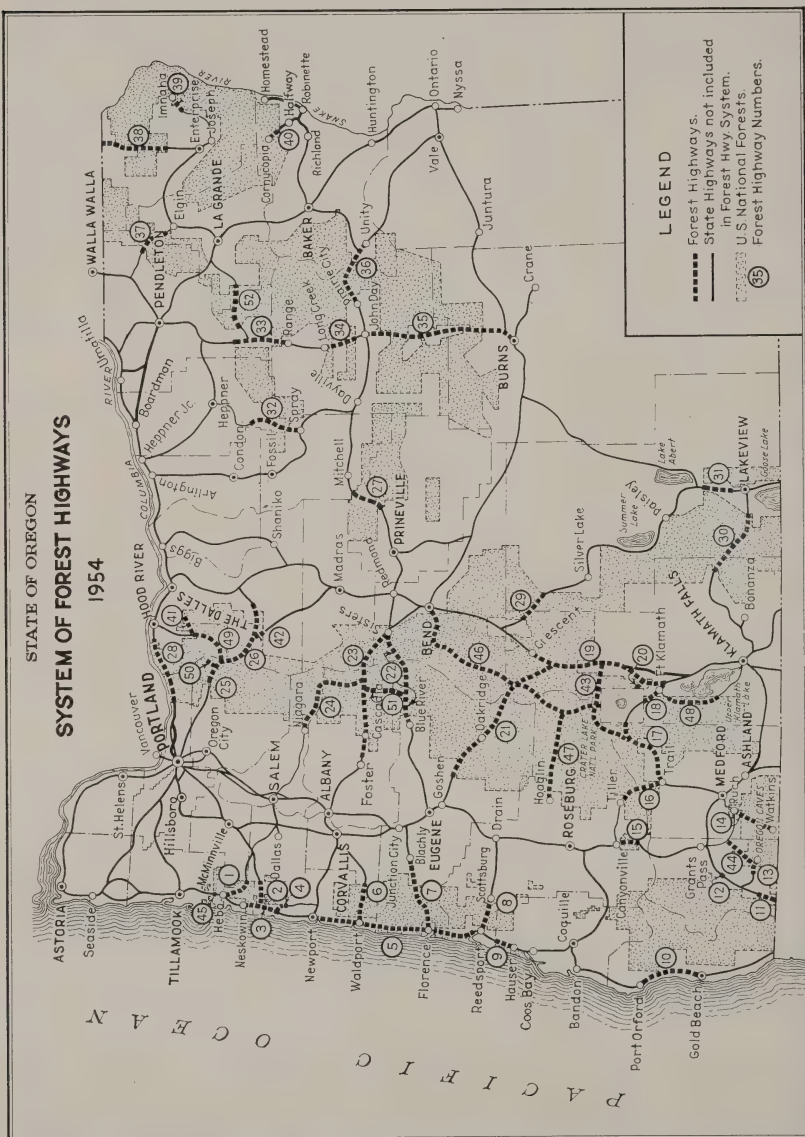
TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
559	Applegate (Co. Rd.)	FAS 268 at Ruch southerly 9.30 miles to a county road	9.30
560	Burns Corner-Suver (Co. Rd.)	FAS 190 near Burns Corner-FA 9 at Suver	12.60
561	Fulton (Co. Rd.)	FAS 461 north of Pendleton-Fulton Station	3.00
562	Despain Gulch (Co. Rd.)	FAS 462 in Stanfield-FAS 461	23.60
563	South Cold Springs (Co. Rd.)	FAS 461 west of Holman-FAS 461 north of Pendleton	13.20
564	Dutch Hall (Co. Rd.)	FAS 466 to Van Sycle County Road	10.00
565	Friend (Co. Rd.)	FA 4 westerly to Friend	5.80
566	Barnes (Co. Rd.)	U 260-027 to FAS 635 in Portland	4.60
567	Rainier-Apiary (Co. Rd.)	FA 1 in Rainier to FAS 601	21.20
568	Coos City-Sumner (Co. Rd.)	FA 2 easterly 1.00 mile to a county road	1.00
569	Lebanon-Brownsville (Co. Rd.)	FA 37 at Lebanon-FAS 215 in Brownsville	17.30
570	Scio-Stayton (Co. Rd.)	FAS 121 in Stayton-FAS 126 in Scio	8.20
571	Youngs River Loop (Co. Rd.)	FA 2 at Miles Crossing-FAS 601 at Olney	11.80
572	Hy-Line (Co. Rd.)	FA 1 near Weiser Junction-FA 1 near Ontario	7.30
573	Base Line (Co. Rd.)	FA 6 near Olex-FAS 439 at McNab	16.90
574	Old Portland Road (Co. Rd.)	FA 1 at Warren-FA 1 at St. Helens	4.00
575	Hardscrabble Hill (Co. Rd.)	FAS 125 near Jefferson-FA 37 east of Albany	5.80
576	Cox Creek (Co. Rd.)	FA 3 in Albany-FA 37 near Lebanon	10.10
577	Lewisburg Loop (Co. Rd.)	FA 9 at Lewisburg-FA 9 north of Lewisburg	3.00
579	Tumalo Falls-Bend (Co. Rd.)	FA 4 in Bend-Tumalo Falls County Road near Deschutes National Forest Boundary	11.40
580	Woodworth (Co. Rd.)	FAS 115 near Mt. Hood-FAS 356 near Parkdale	2.80
581	Oleson (Co. Rd.)	FAS 625 to FAS 622 near Progress	3.00
582	East Burnside Extension (Co. Rd.)	FA 39 to FA 24 near Gresham	3.50
583	Merrill-California State Line (Co. Rd.)	FAS 419 at Merrill to California FAS 753 at Oregon-California State line	1.50
584	Elk City (Co. Rd.)	FA 22 to Elk City	5.30
585	Yaquina Bay (Co. Rd.)	FA 2 at Newport-FA 22 at Toledo	13.50
586	Lafayette-South (Co. Rd.)	FA 9 in Lafayette-FAS 100 near Dayton	2.80
587	Moore Valley (Co. Rd.)	FA 32 in Yamhill westerly to a county road	2.70
588	Emerson Loop (Co. Rd.)	FA 4 near Petersburg to FA 4	10.60
589	Arock Road (Co. Rd.)	Arock to FAS 513	3.40
601	Nehalem	FA 2 in Astoria-FA 27 near Buxton	74.86
602	Warrenton-Ft. Stevens	FA 2 in Warrenton-Ft. Stevens	4.53
603	Fishhawk Falls	FA 27 near Elsie-FAS 601 west of Jewell	5.86
604	Mist-Clatskanie	FAS 601 at Mist-FA 1 at Clatskanie	11.90
605	Warrenton-Chapman Street	FA 2 in Warrenton-FAS 602 in Warrenton	1.62
606	Elsie-Jewell (Co. Rd.)	FA 27 near Elsie-FAS 601 at Jewell	8.91
608	Youngs Bay-Melville (Co. Rd.)	Melville-FA 2 near Astoria	7.92
609	Pittsburg-Scappoose (Co. Rd.)	FAS 601 at Pittsburg-FA 1 at Scappoose	19.79

TABLE IV—Continued

F. A. S. No.	Name	Termini	Length in Miles
610	Inglis-Mayger	FA 1 near Quincy-Mayger	4.64
612	Treharne-Sunset Camp (Co. Rd.)	FA 27 at Sunset Camp-FAS 601 at Treharne	10.50
614	Little Nestucca	FA 2 near Cloverdale-FA 11 at Dolph	9.54
615	Miami River (Co. Rd.)	FA 2 near Garibaldi-FA 2 at Mohler	12.87
616	Cape Meares Loop (Part Co. Rd.)	FA 2 in Tillamook via Netarts, Oceanside, and Cape Meares to FAS 616 near Tillamook	19.35
618	Hemlock-Sand Lake (Co. Rd.)	Sand Lake-FA 2 at Hemlock	5.52
619	Peltz Corner-Trask River (Co. Rd.)	FA 2 near Tillamook-FAS 620	2.00
620	Fairview-Clements Corner (Co. Rd.)	FA 35 east of Tillamook-FAS 619	2.80
621	Coast Highway-Pacific City-Woods (Co. Rd.)	FA 2 south of Cloverdale-Woods	3.57
622	Beaverton-Aurora	FA 3 at Aurora-FAS 625 at Beaverton	20.81
623	Nehalem	FA 27 near Davies-FA 32 at Forest Grove	9.75
624	Forest Grove-Balm Grove (Co. Rd.)	FA 32 at Forest Grove-FA 35 near Gales Creek	10.65
625	Beaverton-Hillsdale	FA 32 at Beaverton-U 260-009 in Portland	6.72
626	Farmington	FAS 650 south of Hillsboro-FAS 622 in Beaverton	9.89
627	Scholls	FAS 650 at Scholls-FAS 625 near Beaverton	12.40
629	Hillsboro-North Plains-Shadybrook (Co. Rd.)	FA 32 in Hillsboro-Shadybrook	8.55
631	Cornelius-Blooming (Co. Rd.)	1 mile south of Blooming-FA 32 at Cornelius	3.70
632	Hillsboro-Cornelius Pass (Co. Rd.)	FA 32 in Hillsboro-FA 1 near Burlington	13.70
633	Hillsboro-Farmington-North Scholls (Co. Rd.)	FAS 627 near North Scholls-FA 32 near Hillsboro	8.05
634	Six Corners-Sherwood-Tualatin (Co. Rd.)	FA 9 at Six Corners-FAS 622 at Tualatin	5.12
635	Cedar Mill (Co. Rd.)	FA 27 near Orenco-U 260-001 in Portland	8.56
637	Sun Dial	FA 1 east of Fairview-Aluminum Plant	1.25
638	N. E. Glisan Street (Co. Rd.)	U 260-401 to FA 39 south of Fairview	7.20
639	S. E. Foster Road (Co. Rd.)	FAS 129 at Damascus-U 260-041 in Portland	8.93
643	Sauvies Island (West Side) (Co. Rd.)	FA 1 south of Burlington-FAS 644 east of Burlington	2.50
644	Sauvies Island (Central) (Co. Rd.)	FAS 643 east of Burlington-FAS 643 south of Burlington	10.40
645	Sauvies Island (Oak Island) (Co. Rd.)	FAS 644 east of Burlington-north end Little Sturgeon Lake	3.06
650	Hillsboro-Newberg	FA 9 in Newberg-FA 32 in Hillsboro	20.35
		Total mileage on Secondary Federal-aid Highway System	4,966.97

Public Lands Highways: Public Lands Highways are highways or parts of highways which, because of their being on unappropriated and unreserved public lands, Indian reservations or other federal reservations, are eligible to have Public



Lands Highway funds expended upon them. No definite system has been designated for this class of highways, but to date use of the Public Lands Highways funds has been confined in principal part to the Warm Springs Highway across the Warm Springs Indian Reservation and the I. O. N. Highway in Malheur County.

Federal funds allotted to Oregon for use on public lands highways during the fiscal years 1939 to 1943 were as follows:

Fiscal year 1939	$167,394
Fiscal year 1940	60,542
Fiscal year 1941	129,201
Fiscal year 1942	96,839
Fiscal year 1943	99,100

During the fiscal years 1944 to 1951, inclusive, Congress made no authorizations of funds of this class. Authorizations were resumed beginning with the fiscal year 1952, but authorizations for that year and subsequent years, unlike the authorizations for earlier years, were not allotted to the states on a formula basis. Instead, the funds have been allotted "on the basis of need as determined by the Commissioner of Public Roads." Of 1952 funds, $200,000 has been allotted to the I. O. N. Highway in Oregon. Of later funds, none has as yet been allotted to Oregon.

Federal Forest Highways: The Federal Forest Highway System comprises such main highways within or near national forests as have been designated by the Federal Forest Service, the Bureau of Public Roads and the State Highway Commission for improvement with federal forest highway funds. A list of the highways included in this system is given in Table V.

Construction work financed with Forest Highway funds is contracted and supervised by the Bureau of Public Roads. However, the Highway Commission has a voice in the selection of the projects to be undertaken, and in matters of location and standards of construction.

Federal funds authorized for use on Forest Highways during each of the fiscal years 1956 and 1957 are in the amount of $22,500,000. Oregon's share of each is approximately $3,000,000.

TABLE V

Oregon Forest Highway System

Forest Road No.	State No.	Name	Termini	Length in Miles
1	32	Three Rivers	Hebo-East Forest Boundary	13.9
2	39	Salmon River	Oregon Coast Highway-Polk County Line	13.7
3	9	Oregon Coast	Neskowin-Siletz River	22.8
4	181	Siletz	Oregon Coast Highway-Forest Boundary	6.0
5	9	Oregon Coast	Yaquina Bay-Umpqua River	68.7
6	27	Alsea	Waldport-Benton County Line	28.4
7	34	Siuslaw	Oregon Coast Highway-Blachly	45.1
8	45	Umpqua	Reedsport-Scottsburg	15.6
9	9	Oregon Coast	Douglas County Line-Hauser	9.7
10	9	Oregon Coast	Port Orford-Gold Beach	31.3
11	25	Redwood	O'Brien Schoolhouse-State Line	5.4
12	25	Redwood	Summit Hayes Hill-Love Station	2.0
13	38	Oregon Caves	3 miles west of Forest Boundary to Caves	11.5
14	....	Applegate (county road)	Ruch-Watkins	17.0
15	1	Pacific	Canyonville-2¾ miles south of Forest Boundary	11.0
16	230	Tiller-Trail	Tiller to Trail	26.3
17	22	Crater Lake	Trail-Park Boundary	44.0
18	22	Crater Lake	Park Bdry. to Sun Mountain Highway	7.7
19	*	Dalles-California	Crescent to Crater Lake Highway	57.8
20	424	Sand Creek	Sun Mountain Highway-Park Boundary	4.3
21	18	Willamette	Lowell to Dalles-California Highway	73.3
22	15	McKenzie	Blue River to Sisters	51.2
23	16	Santiam	1 mile east of Foster to Sisters	69.5
24	162	North Santiam	Niagara-Santiam Highway	44.6
25	26	Mount Hood	West Forest Boundary to Wapinitia Jct.	15.4
26	44	Wapinitia	Mt. Hood Highway to 1 mile north of Wapinitia	32.6
27	41	Ochoco	West Forest Boundary to North Forest Boundary	19.6
28	2	Columbia River	West Forest Boundary to East Forest Boundary	27.3
29	19	Fremont	West Forest Boundary to East Forest Boundary	16.2
30	20	Klamath Falls-Lakeview	West Forest Boundary to East Forest Boundary	29.4
31	19	Fremont	4 miles south of Valley Falls to 6 miles north of Lakeview	13.0
32	321	Heppner-Spray	Mouth of Chapin Creek to John Day Highway	26.3
33	28	Pendleton-John Day	2½ miles northwest of Albee to Range	30.7
34	28	Pendleton-John Day	Long Creek-South Forest Boundary	20.4
35	**	John Day-Burns	John Day-Burns	70.2
36	5	John Day	Prairie City-Unity	42.6
37	330	Weston-Elgin	McDougall's Camp to Summerville-Elgin Road	23.2
38	11	Enterprise-Lewiston	State Line to South Forest Boundary	30.3
39	350	Little Sheep Creek	West Forest Boundary to Imnaha	8.8
40	413	Baker-Cornucopia	Carson to Corucopia	5.0
41	....	Loop-Dalles (county road)	Mt. Hood Highway to East Forest Boundary	15.0
42	53	Warm Springs	Wapinitia Highway to Forest Boundary	6.9
43	†	Diamond Lake	Union Creek to Dalles-California Highway via Diamond Lake	38.9
44	‡	Williams Creek	Provolt to Oregon Caves Highway	20.0
45	9	Oregon Coast	North Forest Boundary to South Forest Boundary between Beaver and Hebo	1.1

TABLE V—Continued

Forest Road No.	State No.	Name	Termini	Length in Miles
46	§	Cascade Lakes	North Boundary of Crater Lake Park to Bend	101.0
47	....	North Umpqua	Rock Creek to Cascade Lakes Highway	60.0
48	421	Klamath Lake-West Side	Seven Mile Creek to Forest Boundary southeast of Odessa Creek	20.0
49	26	Mount Hood	Wapinitia Junction-North Forest Boundary	21.5
50	173	Timberline	Mt. Hood Highway Junction to Timberline Lodge	5.6
51	....	Belknap Springs	McKenzie Highway Junction near Belknap Springs to Santiam Highway	21.0
52	341	Ukiah-Hilgard	West Forest Boundary to East Forest Boundary	20.4
			Total mileage on Forest Highway System	1,423.2
			Mileage on State System	1,215.6

* Includes 30.8 miles on Highway 4 and 27.0 miles on Highway 428.
** Includes 67.7 miles on Highway 48 and 2.5 miles on Highway 7.
† State Secondary Highways 233 and 425.
‡ Incudes 9.3 miles on State Secondary Highway 261.
§ Includes 17.1 miles on State Scondary Highways 232 and 372.

County Roads: County roads are those roads, control of which, and responsibility for which, rests with the counties by and through the respective county courts or county commissions. They comprise those roads in the state which are not a part of either the state highway system or the systems of roads over which control is held by the federal government by reason of their being located in national forests, national parks and Indian reservations.

County roads constitute about 65 per cent of all roads in the state. The total mileage is 31,370. Of them, 1,718 miles are in the federal-aid secondary highway system.

Funds with which county roads are improved and maintained come from the following sources:

1. Property taxes.
2. Road-user fees and taxes, including motor vehicle license fees, gasoline tax, motor transportation fees and fines for traffic law violations.
3. Federal aid.

Of the road-user fees and taxes collected within the state, 19 per cent is allotted to counties for use on their county roads. In 1954, this 19 per cent will amount to approximately $9,649,000.

Of those of the county roads which are on the federal-aid secondary highway system (1,718 miles) are eligible to have federal-aid secondary highway funds expended upon them. Allotments of this class of funds to county roads of Oregon amount to $1,860,000 for the fiscal year 1956 and a like amount for the fiscal year 1957. These federal funds must be matched with local (state or county) funds on a 40 per cent local, 60 per cent federal, basis and it has been agreed that in Oregon the match money will be contributed half by the State and half by the counties. Thus, under the federal-aid program, county roads will each year receive the benefit of an expenditure of $3,100,000, this amount comprising $1,860,000 of federal funds, $620,000 of State funds and $620,000 of county funds.

Expenditures under the federal-aid program must be confined to highway construction and improvement; none of the moneys available for that program may be used in maintenance work. Work under that program is to be done by contract and under engineering supervision of the State Highway Department.

According to reports rendered by counties, the total expenditure on county roads during the year 1952 (exclusive of federal and state expenditures) amounted to $19,650,917.

FINANCES

Sources of State Highway Income

Moneys used by the State Highway Commission in the improvement, maintenance and operation of highways and parks come from two general sources: (1) State funds, consisting principally of the Commission's share of the motor vehicle revenues collected by the State, and (2) Federal funds coming to the State in the form of federal aid. Some additional moneys are received as cooperation from counties and other agencies, but the amounts of these are small. Occasionally, on authorization by the State Legislature, the state fund income is supplemented by the sale of bonds.

The state funds above referred to are derived almost entirely from road-user taxes and fees as follows:

1. Gasoline tax.
2. Diesel fuel tax.
3. Motor vehicle license fees and operators' fees.
4. Motor transportation fees.
5. Fines for traffic law violations.

Of the revenues yielded by these taxes and fees, 19.0 per cent is allotted to the counties for use on county roads, and 10.0 per cent is alloted to the cities for use on city streets. From these revenues, also, an additional amount approximating 3.0 per cent is appropriated by the state legislature for use by the State Police Department. The remaining 68.0 per cent is placed at the disposal of the State Highway Commission for use on highways and parks.

Table VI shows in dollars and cents how the road-user revenues of the past several years have been shared between the counties, the cities, the State Police and the State Highway Commission.

Table VII combines the State Highway Commission's income from road-user revenues with other state fund income and with federal aid and other cooperative income, to give the Commission's total income and to show the trends in that income during the period 1943 to 1956.

TABLE VI

Distribution of Road-User Revenues as Between Counties, Cities, State Police and Highway Commission 1943 to 1956

Year	Total Revenue (after deduction of refunds and collection expense)	Amounts Paid During Calendar Year			
		To Counties	To Cities	To State Police	To Highway Commission
1943	$14,738,561.68	$ 2,612,415.69	$	$ 390,898.76	$11,735,247.23
1944	15,140,109.85	2,311,568.60	736,168.35	380,662.52	11,711,710.38
1945	16,734,157.53	2,340,748.48	745,461.30	428,111.75	13,219,836.00
1946	22,386,469.72	2,598,427.65	827,524.73	338,708.71	18,621,808.63
1947	26,909,331.93	5,318,951.55	1,116,720.52	766,460.09	19,707,199.77
1948	28,649,923.93	5,078,975.14	2,663,328.79	1,035,763.45	19,871,856.55
1949	30,633,221.29	6,677,113.29*	4,108,624.45	1,034,746.51	18,812,737.04
1950	42,508,972.44	7,022,116.21*	3,616,934.59	1,018,332.50	30,851,589.14
1951	44,363,588.90	7,974,421.62*	4,357,242.74	1,083,749.75	30,948,174.79
1952	47,036,032.88	8,635,326.51*	4,564,568.52	1,149,167.00	32,686,970.85
1953	50,050,521.35	9,262,118.90	4,835,724.03	1,356,573.50	34,596,104.92
1954 (Est.)	50,545,000.00	9,649,000.00	5,003,000.00	1,564,000.00	34,329,000.00
1955 (Est.)	51,291,000.00	9,738,000.00	5,125,000.00	1,606,000.00	34,822,000.00
1956 (Est.)	52,180,000.00	9,908,000.00	5,215,000.00	1,648,000.00	35,409,000.00

* Includes $1,127,597.97 loaned to certain counties in 1949 and 1950 and the repayment of such loans in 1950, 1951 and 1952.

The recovery in income which followed termination of World War II was remarkably rapid. By 1948, the income from motor vehicle taxes and fees had mounted to $28,649,923 as compared with the 1941 income of $17,835,937, the highest for any of the prewar years, and with the 1943 income of $14,738,561, the lowest for the war years. Of the increase of $10,813,986 between 1941 and 1948, the counties and cities received $5,331,-343. The Highway Department benefited to the extent of $4,787,977. The remaining $694,666 went to the State Police Department.

Of the revenue increase of $11,875,751 as between 1949 and 1950, approximately $9,500,000 was the result of increased rates of taxation authorized by the State Legislature in 1949, about $4,700,000 coming from the 1 cent increase in gasoline tax, about $3,200,000 from the $5.00 increase in registration fees paid by automobiles and about $1,600,000 from the higher registration fees and P.U.C. fees paid by trucks. Of the $9,500,-000 increase, the counties and cities received 29 per cent (approximately $2,750,000) and the Highway Department received 71 per cent or approximately $6,750,000.

TABLE VII

Incomes to Highway Commission from All Sources (Excluding Proceeds of Bond Sales) 1943 to 1956

Year	Road-User Revenues	Other State Sources	Federal Cooperative Funds	Other Cooperative Funds	Total Income
1943	$11,735,247.23	$ 2,907.87	$ 4,341,584.26	$ 34,050.00	$16,113,789.36
1944	11,711,710.38	3,274.01	3,108,858.22	38,662.71	14,862,505.32
1945	13,219,836.00	4,333.64	2,290,000.27	2,411.01	15,516,580.92
1946	18,621,808.63	59,344.66	2,339,091.54	1,935.08	21,022,179.91
1947	19,707,199.77	76,554.92	6,771,812.00	38,621.33	26,594,188.02
1948	19,871,856.55	298,824.66	6,180,173.46	51,041.04	26,401,895.71
1949	18,812,737.04	419,032.12	6,555,119.04	341,113.28	26,128,001.48
1950	30,851,589.14	515,840.04	6,586,420.35	364,431.88	38,318,281.41
1951	30,948,174.79	271,714.66	7,327,746.25	809,904.35	39,357,540.05
1952	32,686,970.85	375,958.70	7,334,398.41	740,141.14	41,137,469.10
1953	34,596,104.92	529,985.98	8,859,076.91	718,947.04	44,704,114.85
1954 (Est.)	34,329,000.00	1,179,000.00	9,800,000.00	979,000.00	46,287,000.00
1955 (Est.)	34,822,000.00	410,000.00	11,850,000.00	1,440,000.00	48,522,000.00
1956 (Est.)	35,409,000.00	300,000.00	12,000,000.00	670,000.00	48,379,000.00

Begining with the year 1953, the rate of annual increase in revenue has dropped materially below that of earlier years. The income of 1954 will be scarcely one per cent above that of 1953.

In the twelve-year interval between 1941 and 1953, the annual income of the Highway Commission, inclusive of federal aid, but exclusive of returns from sales of bonds, increased from $18,000,000 to $44,700,000, an increase of 148 per cent. This appears to be and is a considerable increase. However, when figured in buying power, the $18,000,000 income of 1941 is the equivalent of an income of about $33,000,000 in 1953. Thus, in buying power, the increase in income during the 12-year period figures only 35 per cent. During the same 12-year period, the traffic to which the state highway system is subjected increased 100 per cent with more than a proportionate part of the increase having been in the traffic of heavier weight vehicles.

TABLE VIII

Income for Calendar Year 1953

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Administrative Expense (Secretary of State and P. U. C.)	Net Amount for State Highways, State Police Cities and Counties
State Funds:			
Motor vehicle license fees	$11,716,689	$ 1,966,567	$ 9,750,122
Gasoline tax ($34,100,227 less $3,630,061 refunds)	30,470,166	100,247	30,369,919
Diesel fuel tax	48,035	3,474	44,561
Motor transportation fees	10,323,826	823,977	9,499,849
Fines for traffic law violations	386,070	.....	386,070
Cash discounts	31,356	.....	31,356
Contributions to cities withheld	250,000	.....	250,000
Proceeds from sale of bonds	41,438,209	.....	41,438,209
Receipts from counties to apply on loans	20,000	.....	20,000
Interest on loan of bond funds	248,630	.....	248,630
Subtotals	$94,932,981	$ 2,894,265	$92,038,716
Less $1,356,573 contribution to State Police, and $4,835,724 to cities	$9,282,119	to counties	15,474,416
Net receipts of state funds for highway purpose			$76,564,300
Cooperative Funds:			
Federal cooperative funds			$ 8,859,077
County cooperative funds			482,206
Miscellaneous cooperative funds			222,470
City cooperation on city allotment projects			14,271
Subtotal, cooperative funds			$ 9,578,024
Total, all receipts			$86,142,324
Balance on hand beginning of year			$18,258,118

Incomes, 1953 and 1954

Detailed statements of the incomes received during the calendar years 1953 and 1954 appear in Tables VIII and IX.

The incomes shown in the tables are inclusive of the proceeds of bond sales which proceeds amounted to $41,438,209 in 1953. When this amount is subtracted, the incomes currently available for use by the Highway Department become $44,704,115 for 1953 and $46,287,000 for 1954. The comparable amount for 1952 was $41,137,000. The increases of 8.7 per cent, 1953 over 1952, and of 3.5 per cent, 1954 over 1953 are due in part to increased taxes levied against commercial trucks and in part to increases in federal-aid allotments.

TABLE IX

Estimated Income for Calendar Year 1954

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Administrative Expense (Secretary of State and P. U. C.)	Net Amount for State Highways State Police Cities and Counties
State Funds:			
Motor vehicle license fees	$11,800,000	$ 2,000,000	$ 9,800,000
Gasoline tax ($34,500,000 less $3,700,000 refunds)	30,800,000	100,000	30,700,000
Diesel fuel tax	50,000	5,000	45,000
Motor transportation fees	10,450,000	850,000	9,600,000
Fines for traffic law violations	400,000	.....	400,000
Cash discounts	35,000	.....	35,000
Contributions to cities withheld	250,000	.....	250,000
Interest on loan of bond funds	890,000	.....	890,000
Refund of 1953 balance from State Police	4,000	.....	4,000
Subtotals	$54,679,000	$ 2,955,000	$51,724,000
Less $1,564,000 contribution to State Police, $9,649,000 to counties and $5,003,000 to cities			16,216,000
Net receipts of state funds for highway purposes			$35,508,000
Cooperative Funds:			
Federal cooperative funds			$ 9,800,000
County cooperative funds			564,000
Miscellaneous cooperative funds			400,000
City cooperation on city allotment projects			15,000
Subtotal, cooperative funds			$10,779,000
Total, all receipts			$46,287,000
Balance on hand beginning of year			$44,393,250

The total of funds available to the Highway Department for expenditure during the two years 1953 and 1954 is estimated at $150,687,000, which amount comprises the following:

Unexpended balance carried over from 1952	$ 18,258,000
Receipts of road-user revenues, 1953	34,596,000
Receipts of road-user revenues, 1954	34,329,000
Receipts of Federal-aid funds, 1953	8,859,000
Receipts of Federal-aid funds, 1954	9,800,000
Receipts of other cooperative funds, 1953	1,249,000
Receipts of other cooperative funds, 1954	2,158,000
Proceeds of bond sales, 1953	41,438,000
	$150,687,000

Of the $150,687,000 available, $125,915,000 is expected to be disbursed during the two-year period, leaving $24,772,000 unexpended as of December 31, 1954. This balance, mostly bond funds, is to be held in reserve to meet contractural obligations and payments on bonds as such obligations and payments become due.

Anticipated Incomes, 1955 and 1956

State Highway Department incomes for the calendar years 1955 and 1956 are estimated at $48,522,000 and $48,379,000, respectively. Detailed statements of these expected incomes are given in the accompanying Table X.

TABLE X

Anticipated Incomes for Calendar Years 1955 and 1956

Source of Income	1955	1956
State Funds:		
Motor vehicle license fees (net)	$10,050,000	$10,300,000
Gasoline tax (net)	30,800,000	31,000,000
Diesel fuel tax (net)	41,000	30,000
Motor transportation fees (net)	10,000,000	10,450,000
Fines for traffic law violations	400,000	400,000
Cash discounts	30,000	30,000
Contributions to cities withheld	250,000	250,000
Interest on loans of bond funds	130,000	.....
Refund of 1955 balance from State Police	.....	20,000
Subtotals	$51,701,000	$52,480,000
Less contributions to State Police	$ 1,606,000	$ 1,648,000
Less contributions to counties	9,738,000	9,908,000
Less contributions to cities	5,125,000	5,215,000
Subtotals, contributions	$16,469,000	$16,771,000
Net receipts of state funds for state highway purposes	$35,232,000	$35,709,000
Cooperative Funds:		
Federal cooperative funds	$11,850,000	$12,000,000
County cooperative funds	645,000	645,000
Miscellaneous cooperative funds	770,000	.....
City cooperation on city allotment projects	25,000	25,000
Subtotals, cooperative funds	$13,290,000	$12,670,000
Totals, all estimated receipts	$48,522,000	$48,379,000
Estimated balance on hand, beginning of year	$24,772,000	$ 5,530,000

Expenditures, 1953 to 1956

In accompanying Tables XI and XII, the expenditures for 1953 and expected expenditures for 1954, 1955 and 1956 are shown to be as follows:

1953	$60,007,192
1954 (Estimated)	65,903,000
1955 (Estimated)	67,764,000
1956 (Estimated)	50,746,000

The drop of some $17,000,000 as between 1955 and 1956 expenditures is occasioned by the completing of the $72,000,000 bond program. Exclusive of bond fund expenditures, the average of the expenditures for the four years is approximately $46,500,000. In this average annual expenditure the federal government participates financially to the extent of approximately $10,500,000. About $2,750,000 of the annual expenditure is for construction on county roads. Beginning with the year 1955, the federal participation will be upward of $12,000,000 per year and the annual expenditure for construction on county roads will approximate $3,100,000.

Showing the extra climbing lane on the Oregon Coast Highway north of Lakeside, Coos County.

TABLE XI

Expenditures for Calendar Years 1953 and 1954

Class of Expenditures	1953 Actual	1954 Estimated
Capital Outlays:		
Federal-aid construction projects	$13,017,305	$11,000,000
Bond construction projects	18,582,628	21,000,000
State construction projects	1,586,544	2,100,000
City allotment projects	265,042	255,000
Cooperation in forest road work	20,364	1,000
Minor betterments	764,229	800,000
Surveys	1,371,956	1,392,000
Property acquisition, general expense	154,153	157,000
Purchase of right of way, quarries, etc.	4,103,356	6,530,000
Purchase of parks	Cr. 20,143	1,000
Improvement of parks	477,507	393,000
Improvement of maintenance stations, shops, etc.	742,759	385,000
Equipment purchases, sales and depreciation	332,985	180,000
Subtotals, capital outlays	$41,398,685	$44,194,000
Maintenance:		
Special maintenance	$ 348,388	$ 300,000
General maintenance, primary	7,522,247	7,800,000
General maintenance, secondary	2,648,409	2,700,000
County road signs, etc.	35,718	30,000
Subtotals, maintenance	$10,554,762	$10,830,000
Miscellaneous:		
Administration and general supervision	$ 2,196,885	$ 2,411,000
Planning and traffic surveys	371,347	422,000
Travel information bureau	281,211	275,000
Radio communication system	48,233	54,000
Truck load inspection	371,037	396,000
Operation of parks	366,827	379,000
Maintenance station and truck scale upkeep	135,398	112,000
Operation of drawbridges and ferries	236,419	237,000
Retirement and social security expense	571,732	725,000
Miscellaneous expense	126,436	37,000
Service and clearing accounts	1,001,513	300,000
Bond interest and maturities	2,346,707	5,536,000
Subtotals, miscellaneous	$ 8,053,745	$10,884,000
Totals, all purposes	$60,007,192	$65,908,000

TABLE XII

Anticipated Expenditures for Calendar Years 1955 and 1956

Class of Expenditures	1955	1956
Capital Outlays:		
Federal-aid construction projects	$19,200,000	$16,300,000
Bond construction projects	16,000,000	3,300,000
State construction projects	1,650,000	1,650,000
City allotment projects	265,000	265,000
Minor betterments	900,000	900,000
Surveys	1,441,000	1,285,000
Property acquisition, general expense	163,000	167,000
Purchase of right of way, quarries, etc.	4,585,000	3,190,000
Purchase of parks	100,000	75,000
Improvement of parks	462,000	370,000
Improvement of maintenance stations, shops, etc.	375,000	323,000
Equipment purchases, sales and depreciation	70,000	70,000
Subtotals, capital outlays	$45,211,000	$27,895,000
Maintenance:		
Special maintenance	$ 400,000	$ 400,000
General maintenance, primary	7,857,000	7,950,000
General maintenance, secondary	2,680,000	2,775,000
County road signs, etc.	34,000	30,000
District maintenance superintendence	350,000	355,000
Reserve for extra expense of 40-hour week	250,000	270,000
Contingencies, maintenance	150,000	150,000
Subtotals, maintenance	$11,721,000	$11,930,000
Miscellaneous:		
Administration and general supervision	$ 2,047,000	$ 2,062,000
Planning and traffic surveys	475,000	475,000
Travel information bureau	275,000	275,000
Radio communication system	60,000	60,000
Truck load inspection and permit division	482,000	560,000
Operation of parks	421,000	450,000
Maintenance station and truck scale upkeep	120,000	130,000
Operation of drawbridges and ferries	237,000	240,000
Contribution to retirement and social security	777,000	799,000
Miscellaneous expense	166,000	193,000
Service and clearing accounts	300,000	350,000
Bond interest and maturities	5,472,000	5,327,000
Subtotals, miscellaneous	$10,832,000	$10,921,000
Totals, all purposes	$67,764,000	$50,746,000

Revision of U. S. 30 in Arlington provides traffic channels and a new bridge over China Creek, Gilliam County.

Federal Participation in Financing of State Highway Work

Much of the work being performed under the direct control and supervision of the State Highway Commission is financed in part with funds provided by the Federal Government. Federal funds thus utilized are of several classes, each class being subject to such special use and to such special limitation and control as may be specified for it by the Congress. The several classes that are currently active are as follows:

1. Federal-aid Primary Highway Funds
2. Federal-aid Secondary Highway Funds
3. Federal-aid Urban Highway Funds
4. Federal-aid Interstate Highway Funds

The first two classes of the currently active funds were made available year after year for many years with comparatively slight changes in annual amounts and with few changes in bases of application. The third class of the currently active funds was set up by the federal-aid highway act of 1944, in recognition of the growing need for improvement of federal-aid routes through cities and their surrounding urban areas. Presumably, this class of funds will be continued on a more or less permanent annual basis, the same as the federal-aid primary highway funds and the federal-aid secondary highway funds.

The first authorization of funds for the fourth of the four classes mentioned was made in the Federal-aid Highway Act of 1952. The amount was small but it is presumed that in future years the amount will be increased to insure more rapid improvement of those most important highways which comprise the Interstate System.

Federal funds for highway work are not turned over to the states in advance of construction. Instead, they are paid to the states in the form of reimbursement during and after the period that the work is in progress. They are paid only on projects for which the plans have been previously approved by the Bureau of Public Roads and for which the work is conducted in accordance with applicable requirements established by the Bureau of Public Roads.

The extent of federal participation in the costs of projects selected for federal aid is, basically, fifty per cent. However, in those states in which more than five percent of the land area is unappropriated and unreserved public land and nontaxable Indian land, the ratio of federal participation is increased on a proportionate basis with the result that federal participation in Oregon is at the rate of 61.98 per cent.

Interstate projects are an exception to the foregoing rule in that the federal participation is basically sixty per cent and in Oregon the participation is at the rate of 69.58 per cent.

Federal aid apportioned to a state must be placed under contract within two years after the close of the fiscal year for which the apportionment is made. Amounts not so contracted revert to the federal government to be redistributed among all of the states. Under this arrangement, the State has about three and one-half years in which to use the apportionment for a given year.

Oregon's allotments of federal aid for each of the two fiscal years 1956 and 1957 are as follows:

Federal-aid primary highway funds	$ 5,398,620
Federal-aid secondary funds	3,772,987
Federal-aid urban highway funds	1,387,166
Federal-aid interstate highway funds	2,330,696
	$12,889,469

The classes of projects to which the use of the several kinds of federal funds are limited are as described in the paragraphs which follow:

Federal-aid Primary Highway Funds: Federal-aid primary highway funds can be applied only on permanent improvement projects on highways included in the Federal-aid Primary Highway System or the Federal-aid Urban Highway System. A map of the Federal-aid Primary Highway System accompanies this report, and in the accompanying Table III there are given the numbers, names, and lengths of the highways which comprise the system. The total mileage of federal-aid

TABLE XIII

Federal Aid Funds and Forest Road Funds

Period for Which Funds Are Apportioned	Federal Aid Funds	Forest Road Funds	Total
Total of prior apportionments	$ 82,440,189.18	$ 31,191,614.89	$113,631,804.07
Act of November 9, 1941:			
Period of war emergency			
Flight strip funds	1,142,636.54	.....	1,142,636.54
Access road funds	5,305,051.21	.....	5,305,051.21
Strategic network funds	2,689,873.31	.....	2,689,873.31
Advance engineering funds	164,913.00	.....	164,913.00
Act of June 29, 1948:			
July 1, 1949 to June 30, 1950			
Federal-aid primary funds	3,330,486.00	2,756,755.00	6,087,241.00
Federal-aid secondary funds	2,272,391.00	.....	2,272,391.00
Federal-aid urban funds	720,430.00	.....	720,430.00
July 1, 1950 to June 30, 1951			
Federal-aid primary funds	3,325,613.00	2,753,489.00	6,079,102.00
Federal-aid secondary funds	2,269,150.00	.....	2,269,150.00
Federal-aid urban funds	720,430.00	.....	720,430.00
Act of September 7, 1950:			
July 1, 1951 to June 30, 1952			
Federal-aid primary funds	3,838,173.00	2,754,914.00	6,593,087.00
Federal-aid secondary funds	2,681,041.00	.....	2,681,041.00
Federal-aid urban funds	978,287.00	.....	978,287.00
July 1, 1952 to June 30, 1953			
Federal-aid primary funds	3,798,278.00	2,756,602.00	6,554,880.00
Federal-aid secondary funds	2,653,463.00	.....	2,653,463.00
Federal-aid urban funds	970,723.00	.....	970,723.00
Act of June 25, 1952:			
July 1, 1953 to June 30, 1954			
Federal-aid primary funds	4,198,212.00	3,100,639.00	7,298,851.00
Federal-aid secondary funds	2,933,480.00	.....	2,933,480.00
Federal-aid urban funds	1,076,050.00	.....	1,076,050.00
Federal-aid interstate funds	427,813.00	.....	427,813.00
July 1, 1954 to June 30, 1955			
Federal-aid primary funds	4,209,393.00	3,098,057.00	7,307,450.00
Federal-aid secondary funds	2,941,860.00	.....	2,941,860.00
Federal-aid urban funds	1,081,596.00	.....	1,081,596.00
Federal-aid interstate funds	428,962.00	.....	428,962.00
Totals	$136,598,494.24	$ 48,412,070.89	$185,010,565.13

primary highways is 3,810.9 miles, which is approximately 80 per cent of the total mileage in the Primary State Highway System.

Federal-aid Secondary Highway Funds: Federal-aid secondary highway funds are available for use only on state highways and county roads included in the federal-aid secondary

highway system. This system includes at present 4,967 miles of highways of which 899 miles are primary state highways, 2,350 miles are secondary state highways and 1,718 miles are county roads. The names, numbers and mileages of the highways and roads comprised in the system are as given in Table IV.

Pacific Highway reconstructed through congested area north of Eugene showing 12-foot median strip for left-turn refuge lanes.

Federal regulations require that at least fifty per cent of available federal-aid secondary highway funds be used on the county road portions of the secondary system.

Federal-aid Urban Highway Funds: The use of federal-aid urban highway funds is limited to those streets and highways within or near cities having populations greater than 5,000 which have been designated as federal-aid urban routes and by reason of that designation are parts of the federal-aid urban highway system.

Federal-aid Interstate Highway Funds: Federal-aid interstate highway funds may be used only on those few most important highways which have been designated as parts of the federal-aid interstate highway system. In Oregon, the only highways on the interstate system are (1) the Pacific Highway from the Washington-Oregon state line north of Portland to the Oregon-California state line south of Ashland and (2) the Columbia River Highway and Old Oregon Trail from Portland to the Oregon-Idaho state line near Ontario.

Public Lands Highway Funds: Public lands highway funds may be used for work on unappropriated and unreserved public lands, nontaxable Indian lands, or other federal reservations other than forest reservations. The locations in Oregon at which these funds can be used advantageously are in the public land areas in the southeastern portion of the state, in the Warm Springs Indian Reservation, and the Klamath Indian Reservation. Use of the funds has been confined, so far, to the I. O. N. Highway in Malheur County, the Central Oregon Highway in Harney County, the Warm Springs Highway in Jefferson and Wasco Counties, the Klamath Falls-Lakeview Highway in Klamath County, and the Princeton-Rome Highway in Harney and Malheur counties.

Public lands highway funds may be applied on a 100 per cent basis on those parts of public lands highway projects which are within the limits of public lands of the kinds mentioned in the preceding paragraph. None can be applied on such portions of projects as are on privately-owned lands or state-owned lands.

Forest Highway Work

Federal forest highway work, unlike federal-aid highway work is performed under the direct supervision of the Federal Bureau of Public Roads. The State Highway Commission has a voice in the selection of projects and in the types and standards of construction, and sometimes has charge of the making of surveys, but does not in any other respect participate in the direction and performance of the work. The Bureau of Public

Roads awards the construction contracts, engineers the work, pays the contractor and does all other things necessary to bring the work to satisfactory completion.

Federal allotments for forest highways have been made more or less regularly since 1916 and have been distributed among the states in proportion to areas and values of the national forest lands within the states. Oregon's share of these allotments has been $48,412,071. Of this amount, $34,380,160 has been expended on the state highway system to date. This expenditure of federal moneys has been supplemented by State cooperation in the amount of $8,111,538, and county cooperation in the amount of $2,286,030, bringing the total expenditures for forest highway projects on the state highway system to $44,777,728. This expenditure has resulted in the completion of 961 miles of grading, 1,043 miles of rock surfacing, 228 miles of oiling and 296 miles of bituminous macadam.

Funds available for forest highway work during the fiscal years 1956 and 1957 are expected to total about $6,000,000.

Use of forest highway funds is limited to work on the Forest Highway System, which system has been arrived at by mutual agreement between the Bureau of Public Roads, the National Forest Service, and the State Highway Commission. It includes only roads which are within or near National Forests. A listing of the roads in the system appears in accompanying Table V. Most, but not all, of the roads included are state highways.

Financial cooperation in forest highway work by the State or by counties is not required but is sometimes given. In all cases, the cost of right of way across lands not owned by the Federal Government is borne by the State or, if the road is a county road, by the county.

Sections of highway constructed with forest highway funds are maintained by the federal government for two years. Responsibility for maintenance is then assumed by the State or the county, depending on whether the project is, or is not, on the state highway system.

County and City Participation in Revenues from Motor Vehicle Imposts

Revenues from motor vehicle imposts are used first of all to pay refunds allowable under the provisions of the laws and to defray expenses incurred by the Secretary of State and the Public Utilities Commissioner in making collections of the revenues and in performing certain administrative and enforcement duties with which they are charged.

The balances remaining after payment of the refunds and expenses mentioned, are allotted as follows:

To Counties	19.0%
To Cities	10.0%
To State Police Department—A monthly allowance fixed by the State Legislature, which amount at present approximates	3.0%
To Highway Commission—The balance remaining after payment of above listed allotments, which balance approximates	68.0%

Oakland Junction-Deady Project on U. S. 99. Climbing lane provided on grades. Douglas County.

County Participation in Income: The counties' share of motor vehicle imposts is distributed among the counties in proportion to the numbers of motor vehicles of all kinds registered from the respective counties during the preceding year. The distribution is made on a quarterly basis, the quarterly periods ending on March 31, June 30, September 30 and December 31. The total amount of each quarterly distribution is 19 per cent of the motor vehicle revenues credited to the State Highway Fund during the quarter. Distribution of each quarterly share is made to the counties on the last day of the month which follows the ending month of the quarter.

Funds received by the counties from this source are required by law to be used for the following purposes, preferentially in the order in which they are listed.

1. In payment of interest and principal on bonds issued for the purpose of road construction and improvement, unless other provision has been made for such payment.
2. In payment of the cost of preparing the roadbed, bridges, etc., for the construction of state highways, as provided by law, unless other provision has been made for payment of such cost.
3. In any other manner for general road improvement, at the discretion of the county court.

For detail as to the extent to which the counties have participated in these revenues, see Table VI in Section Two and Table No. 28 in Section Three of this report.

City Participation in Income: Of the cities' 10 per cent of the motor vehicle revenues, $250,000 is, each year, held in the State Highway Fund for expenditure on city streets by the State Highway Commission as hereinafter explained. The remainder of the cities' 10 per cent is distributed among the cities of the State in proportion to population with the proviso that for any city having a population greater than 100,000, only two-thirds of such city's population is to enter into the calculation. The distribution is made on a semi-annual basis, the semi-annual periods ending on June 30 and December 31. The total amount of each semi-annual distribution is $125,000

less than 10 per cent of the motor vehicle revenues credited to the State Highway Fund during the semi-annual period. Distribution of each semi-annual share is made to the cities immediately following the close of the semi-annual period.

Moneys distributed to the cities as above described are required by law to be used "for constructing, reconstructing, improving, repairing, or maintaining city streets which have not been designated as connecting links between state highways by the state highway department in the manner provided by law." Expenditure of the moneys by cities may be deferred more than two years only when such deferment is approved by the State Highway Engineer. Cities having populations less than 1,000 may expend their respective shares of the moneys only on work for which plans have been submitted to and approved by the State Highway Commission.

Information as to the amounts the cities have received under the above described distribution of motor vehicle revenues is given in Table VI of Section Two and Table No. 26 of Section Three of this report.

The $250,000 which is held in the State Highway Fund each year for expenditure by the Highway Commission on work on city streets is required by law to be expended "upon streets not a part of the state highway system within cities which are receiving excessive wear through sudden increases in population in the area or heavy and unusual industrial traffic." Determination of the distribution of the expenditures to be thus made by the Highway Commission is required to be made by the Highway Commission "after considering applications made to it therefor from the cities."

In its distribution of $250,000 annually available for expenditure, the Highway Commission has found it necessary to restrict its allocations to cities of populations less than 5,000, and to fix the sum of $15,000 as the maximum to be expended on any one project. In a number of cases, the cities contributed additional funds or work to supplement the amounts allotted from the $250,000 fund.

The amounts that have been expended from city allotment fund withholdings since the beginning of the withholding procedure are as shown in Table 27 of Section Three of this report.

Crossing of Haynes Slough on U. S. 101 at Coos Bay. Consists of 3,700-foot fill and 800-foot bridge.

REPORT OF CONSTRUCTION DIVISION

H. G. SMITH, *Construction Engineer*

In volume of work accomplished, the biennial period, July 1, 1952 to June 30, 1954, has proven to be the greatest ever experienced by the Construction Division. During this time, 299 contracts, representing $59,617,500 worth of construction have been handled by this section. This represents an increase of 30 contracts and $9,147,500 over the previous biennium. In addition to the above, several contracts carried over from the previous period have been completed. The large program can be attributed to legislative action of 1951 and 1953 authorizing the sale of $72,000,000 worth of bonds and increased travel leading to more gas tax, license fees, etc.

Contracts awarded during the two-year period are segregated into four major classes as follows: Primary Federal Aid, Urban Federal Aid, Secondary Federal Aid and State-financed projects. Primary Federal Aid accounted for 72 contracts totaling, $44,201,300. Of these contracts, 13 were over one million dollars (including engineering and contingencies). Urban Federal Aid amounted to 7 contracts and $1,272,700. Federal Aid Secondary projects numbered 59, costing $6,728,000. State projects totaling 161 contracts and involving $7,415,500 were divided into three sections as follows: 72 grading, surfacing, oiling, paving, landscaping and fencing projects entailing $4,740,900; 46 maintenance rock projects costing $2,106,400; and 43 contracts on city streets involving $568,200. The contracts and amounts above listed pertain only to those projects under direct supervision of the Construction Division and do not include projects handled by the Bridge Division and covered by a separate report.

Federal-Aid Primary Highway Projects

A brief resume of some of the larger and more important contracts throughout the State will be given in the following paragraphs. Regular Federal-Aid and Bond Fund projects are not segregated as Bond Fund contracts are eligible for future federal aid allocations.

The majority of contracts under this classification have been on the Portland-Salem Expressway and the Pacific High-

way, and tremendous strides have been made toward the bringing of this route to interregional standards. The Barbur Boulevard-Willamette River Section of the Portland-Salem Expressway will be completed to a four lane-divided highway in the Fall of 1954 and will be in full use by virtue of completion of the Boone Bridge at Wilsonville and the opening of the Willamette River-White School Section of the Wilsonville-Hubbard Highway connecting to the Pacific Highway East just south of Aurora. Contracts for the grading of the Willamette River-Hayesville Section of the expressway are well underway, with completion scheduled in early 1955. Contracts for the paving of this section will be called for in August, with completion anticipated by November 1, 1955.

Grading on the Salem Bypass has been completed and paving is practically done, with the section expected to be opened to traffic by November 1, 1954. Completion of this section will alleviate a considerable amount of traffic congestion in the main Salem area because of routing most trucks and through traffic around, instead of through, the business areas.

The Divide-Anlauf Section has been completed and opened to traffic. The Anlauf-Rice Hill Section has been graded, and surfacing and paving are now underway, with completion anticipated in early 1955. The Chenoweth Park-Winchester Section has been completed and opened to traffic. From Winchester to Shady Point (just south of Roseburg) work is progressing rapidly and will be opened to traffic in 1955, providing a freeway route around Roseburg with adequate provision for entrance and exit to Roseburg. From Shady Point to Myrtle Creek, grading is underway on an entirely new route and probably will be usable in 1956. The Blackwell Hill Section in the vicinity of Gold Hill has been completed, and the section from Blackwell Hill to Medford is well along with opening due in late 1954. From Medford to Ashland reconstruction to four-lane standards has been completed.

On the Columbia River Highway some very crooked alignment has been eliminated by the construction of the Gnat Creek-Bradley Park Section, and the Clatskanie-Delena Unit is well underway. Another major improvement just contracted is the Tide Creek (just east of Goble) to St. Helens Section.

The water level route from Troutdale to two miles west of The Dalles is now finished and opened to traffic, with a tremendous saving in time and distance. The section from Arlington to Heppner Junction has also been completed, eliminating a bad alignment and traffic situation in Arlington.

On the Oregon Coast Highway several major projects are underway, and others have been completed during the biennium. In Lincoln County, the Depoe Bay-Miner Creek Section involves major realignment and very heavy construction. Between Elbow Lake and Gardiner another portion of crooked, narrow road is being replaced by modern alignment. From Reedsport to North Bend the entire section has been reconstructed and opened to traffic. Of this section, the Lane County Line-Hauser Section was constructed by the federal Bureau of Public Roads as a forest highway project. In Curry County several contracts are underway between Humbug Mountain and Ophir. Most of this section involves new alignment more or less paralleling the ocean, and provides a faster and more scenic route through this area.

On the Corvallis-Newport Highway, the reconstruction of the Newport-Toledo Unit, involving very heavy construction, has materially improved that section.

On the Siuslaw Highway the rebuilding of the Low Pass Unit has provided a much easier and faster route through the summit area.

Several contracts on The Dalles-California, underway and completed, have nearly eliminated the substandard sections between the Sherman Highway Junction in Wasco County and Klamath Falls. Award of the Sherman Junction-Willowdale Section in June will modernize the route through Cow Canyon, along a very hazardous section on this highway. The Crooked River-Terrebonne Unit completes the section between Madras and Bend, and eliminates the bad curves just south of the Crooked River Bridge. The portion from Bend to Lapine has been completed and opened to traffic. This is through an area of bad snow conditions and high maintenance costs. The new section will provide a faster, easier route for snow removal and greatly improved alignment. From the junction with the Willamette Highway to the junction with the East Diamond

Lake Highway a contract is underway which, when completed, will bring to modern standards all but four of the 138 miles between Bend and Klamath Falls.

On the Central Oregon Highway, three large contracts are underway. The first is the widening and repaving of the Brothers-Hampton Section; the second is the Sage Hen Hill-Hines Section, eliminating a narrow crooked portion of this route, and the third is the Vale-Cairo Junction project, bringing that part to up-to-date standards.

On the Old Oregon Trail Highway the only large project is the Pendleton-Deadmans Pass Section, starting about one and one-half miles east of Pendleton and terminating near the summit of Deadmans Pass. On entirely new alignment, this contract eliminates the famous Cabbage Hill grade and will speed up traffic materially.

Federal-Aid Secondary Highway Projects

In this category, 59 contracts, totaling $6,728,000 were awarded. These projects were partially on state secondary highways and partly on county roads on the Federal Secondary System. No major projects were involved, but all were of great improvement in the local areas. County road jobs have increased the farm-to-market facilities considerably and tend to both speed delivery and lower costs on produce, etc.

Federal-Aid Urban Highway Projects

Only seven contracts of this type were awarded during the period, and several of those were for roadside improvement and landscaping. Only two were of major importance, one being the South Umpqua River-Fairgrounds Section of the Pacific Highway in West Roseburg and the other being the 92nd Avenue-Fairview Section of the T. H. Banfield Expressway. Completion of the 92nd Avenue-Fairview Section will provide expressway facilities from 92nd Avenue to a connection with the Columbia River Highway at Troutdale.

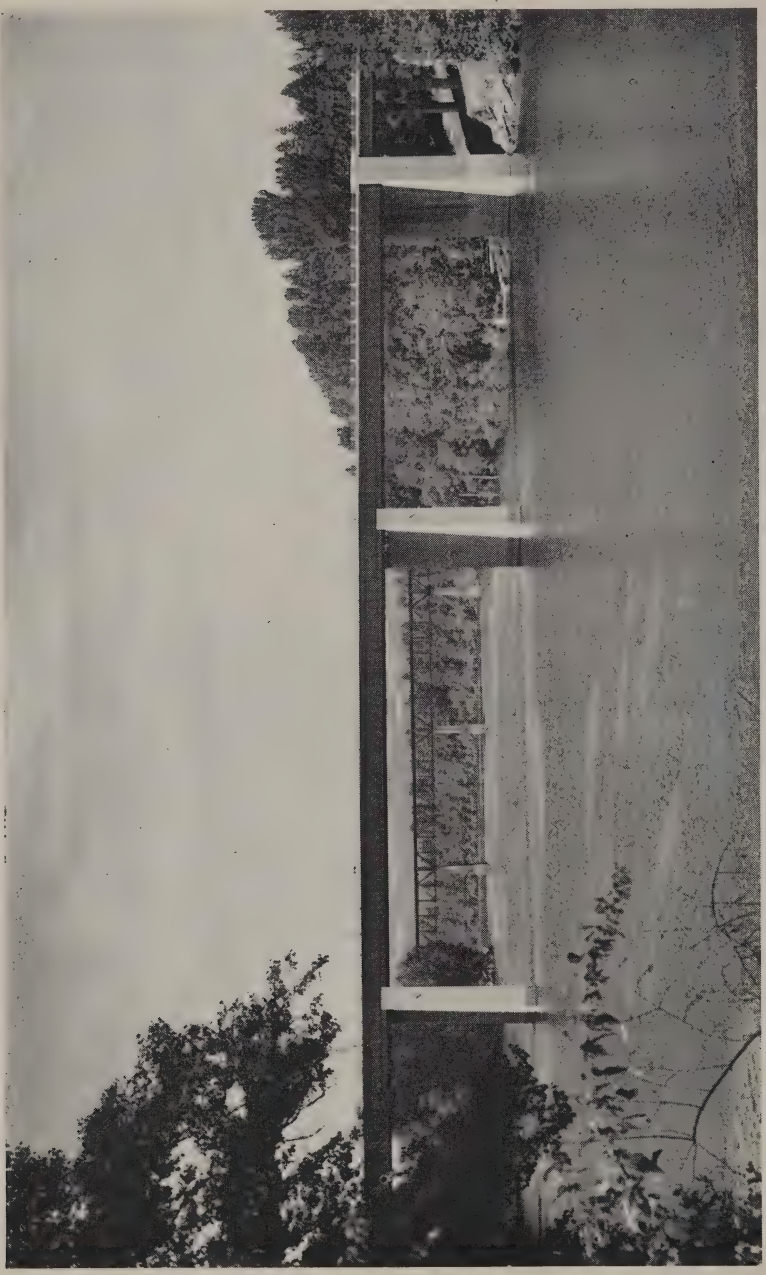
State Projects

State projects (financed without federal funds) are divided into three classifications. Rock production projects, number 46 and costing $2,106,400, provide the necessary crushed stone for patching, resurfacing, and repair of all state highways. Seventy-two, consisting of grading, surfacing, oiling, paving, landscaping, fencing and guard rail contracts, cost $4,740,900. The sum of $568,200 was expended on city streets not on the state highway system and accounted for 43 contracts.

Several of the grading and paving jobs have been for truck climbing lanes. Contracts have been let on the Pacific, Oregon Coast and Wilson River highways on sections where there is sustained grade, three per cent or over, for distances exceeding 3,000 feet. This type of improvement is new and has proven a valuable asset in expediting traffic flow through mountainous areas.

General Comments

Although this period has been the greatest experienced by this division, many of the problems of previous bienniums have materially decreased. Personnel turnover has been considerably less, and the department has been fortunate in securing a number of young graduate engineers, who have proven of value in the handling of the huge program. Intelligent planning of forthcoming contracts has permitted the completing of field surveys in time to permit more careful design, with a resultant saving in cost.



Boone Bridge over Willamette River on Portland-Salem Expressway at Wilsonville, Clackamas County.

REPORT OF BRIDGE DIVISION

G. S. PAXSON, *Assistant State Highway Engineer*

During the biennium, the number of jobs handled and the dollar value of the jobs are the largest in the entire history of the division. The division participated in the award of contracts totaling $14,639,242, in contract cost. This represents the cost on 234 contracts for 385 structures ranging in cost from a low of $892, for a culvert extension, to a high of $1,590,971 for the Boone Bridge over the Willamette River at Wilsonville on the Portland-Salem Expressway.

A breakdown of the various classes of work handled and structures built or under construction on the State Highway system is as follows:

No. of Jobs	Type of Work	Contract Cost
165	New bridges and culverts	$ 7,319,600
18	New highway-railroad grade separation structures	1,282,233
86	New highway-highway grade separation structures	3,109,724
25	Bridges or culverts widened or extended	784,677
35	Buildings of all types	1,063,093
14	Maintenance projects (includes painting steel bridges, redecking bridges, etc.)	361,339
42	Miscellaneous projects (includes traffic signals, highway and tunnel illumination, park developments, etc.)	718,576
385		$14,639,242

The division has, as in the past, continued to give technical assistance to cities and counties on bridge problems. This assistance ranges from on the ground conferences with local authorities concerning a particular problem to the actual preparation of construction plans and specifications and furnishing the same to the city or county in a manner that will permit them calling for bids on the work. Cities are required to pay the actual cost of preparation of the plans and specifications. State laws require this same data be furnished, without cost, to the counties. Field engineering, supervision, and inspection services are furnished on contract construction by the request of the city or county at the actual cost of the same to the State. During the biennium, construction plans and specifications were prepared for three city projects. The State supervised construction on two of these projects. The third project has

not as yet been constructed. Construction plans and specifications were furnished for eleven county projects and construction supervision was furnished on one of these projects.

The Bridge Division is responsible for coordination of all research activities of the State Highway Department. The actual management of a research project is by the division having its principal interest in the specific project or the division with personnel of the required qualifications.

During the biennium, the Bridge Division completed the fourth and final annual cycle of plate bearing tests to determine the loss of strength of certain sections of highway during certain seasons of the year. In cooperation with the Federal Bureau of Public Roads, tests were conducted on the North Dillard Bridge over the South Umpqua River and the Troutdale Bridge over the Sandy River to determine stress, deflection, and vibration under moving loads. Electronic recording equipment was employed.

The Traffic Division conducted tests to determine the comparative legibility of various types of signs.

The Materials Division conducted research on guard rails, paint, lightweight plaster, and stability of asphaltic concrete mixes.

To determine the effect of fish ladder baffles in box culverts on the hydraulic characteristics of the culverts, a research project was conducted by the Engineering Experiment Station at Oregon State College under sponsorship of the State Highway Department.

An investigation of the runoff from small drainage areas in Oregon was continued during the biennium. This is by cooperative agreement, with the U. S. Geological Survey doing the field work and the Highway Department and the Geological Survey each paying half the cost.

Three of the principal projects handled during the biennium are described briefly in the following paragraphs.

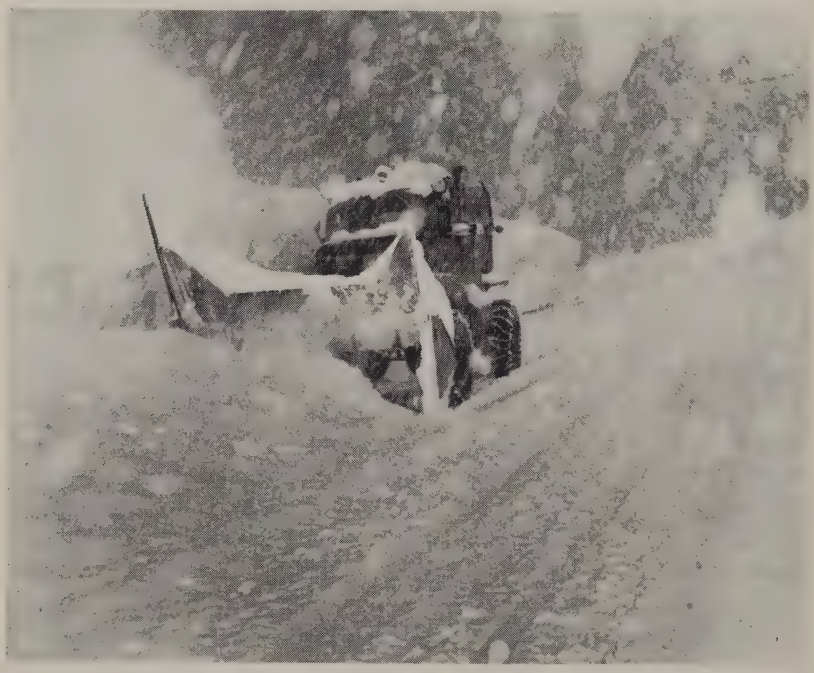
The largest structure built during the biennium was the Boone Bridge over the Willamette River, near Wilsonville, on the new Portland-Salem Expressway. The structure, 1,116 feet total length, consists of a series of concrete approach spans,

220 feet in length, on each side of the river and a series of three steel deck girder spans, 650 feet in total length, over the river. Roadway width is 58 feet with a 3-foot-6-inch sidewalk on each side. Guy F. Atkinson Company was awarded a contract for construction of the approaches, the main river crossing piers, and placing the deck and railing on the steel spans on August 19, 1952, and Bethlehem Pacific Coast Steel Corporation was awarded a contract for furnishing and placing the steel spans only on September 23, 1952. Bethlehem Pacific Coast Steel Corporation completed their contract December 21, 1953, and Guy F. Atkinson Company completed their contract May 24, 1954. Total cost of the two contracts was $1,590,971. Approximately 40,600 lineal feet of timber and steel foundation piling, 8,100 cubic yards of concrete, 550 tons of metal reinforcing, and 1,100 tons of structural steel were required in construction of the bridge.

Reconstruction of the Pacific Highway, in the vicinity of Roseburg, requires construction of a new bridge over the North Umpqua River at Winchester, and two new bridges over the South Umpqua River, one near the north city limits of Roseburg and one near Shady, south from Roseburg. A contract for the Winchester crossing, a 1,637-foot reinforced concrete and steel structure in the amount of $636,970, was awarded November 17, 1953, to Peter Kiewit Sons' Company, and a contract for the northerly crossing of the South Umpqua River, a 714-foot reinforced concrete and steel structure in the amount of $475,365, was awarded February 25, 1954, to Donald M. Drake Company. Construction on both structures is well up to schedule and both will be completed in the summer of 1955. These two structures require 6,000 cubic yards of concrete, 675 tons of metal reinforcing, and 1,050 tons of structural steel. Plans for the crossing at Shady are practically complete and bids will be called for on this structure early in the next biennium.

On May 19, 1953, Paul B. Emerick, of Portland, was awarded a contract, in the amount of $393,739, for construction of a group of buildings to house the Bend Division offices of the highway department and State police, an equipment repair shop, and a storage building for equipment. These buildings

are located one mile north of the city, on The Dalles-California Highway, and replace inadequate quarters near the center of town. The office building, approximately 164 feet by 60 feet in dimension, affords 9,300 square feet of office space. Contract cost on this building was $110,197. The equipment repair shop, 80 feet by 161 feet in dimension, cost $214,810. This building contains equipment repair bays, a paint room, blacksmith shop, central heating plant for all buildings in the group, overhead cranes for heavy lifting, and other aids to heavy equipment maintenance and repair. The equipment shed, 48 feet by 216 feet, costing $37,238, is used to house all types of equipment when it is not in use. The buildings were completed to a stage that permitted occupancy in March, 1954. All work on the contract was completed May 5, 1954.



Rotary snow plow operating in heavy snow on the Santiam Highway, U. S. 20.

REPORT OF MAINTENANCE DIVISION

E. A. COLLIER, *Maintenance Engineer*

Highway maintenance work consists primarily of keeping the surface smooth, the bridges safe and the roadside pleasing. Many other items of work are performed by maintenance forces such as minor betterment of drainage, widening bridges and shoulders, guard fence and sight posts or delineators, state force jobs on contracts, traffic service, operation of ferries, construction of traffic islands, signals and stripes, operation of repair shops and storerooms, office buildings for Highway Engineers and State Police, operation of radio system and reporting of weather and road conditions, all of which add to the safety and convenience of traffic.

Weather is a big factor in maintenance operations. Western Oregon had a bad rain storm in January, 1953; 19 inches fell in five days at Gold Beach and slides and washouts were numerous along the Coast. There was considerable loss of cattle in Coos County, the logging industry was disrupted and several houses demolished. In Curry County over 200 slides blocked the Coast Highway. Repairs were pushed so that this highway was opened to light traffic in a week and to all traffic in a month. Cost in this one county for repairs ran over $150,000.

On the mountain passes during 1953 the maximum depth of snow on the ground was 205 inches at Timberline Lodge, 56 inches at Government Camp, 148 inches on Santiam and 129 inches on Willamette Pass. There were no severe ice conditions through the Columbia Gorge. The summers have been cool and damp the past two years. The equipment used to remove snow consisted of 432 blade plows on trucks, 12 V plows on trucks, 33 rotary snow plows and 20 power graders with serrated blades for packed snow and ice. Removal starts when storm starts and a bare pavement is the goal sought.

Sand sheds holding 3,000 cubic yards on the high summits and smaller sheds and bunkers elsewhere provide dry, unfrozen sand which is a big help on packed snow and ice. Eleven sand spreaders of 9-yard capacity and 82 power tail gate spreaders and many smaller towed spreaders are used and 30 more tail gate spreaders are on order. The cost for snow removal in

1953 was $751,548 and for sanding was $337,166, a very necessary expense to permit travel on the highways all winter. Traffic was kept moving through the valiant efforts of the men in the field who worked faithfully in severe weather.

Organization

The general maintenance work is performed by section crews, 135 in number, each headed by a section foreman. Each crew works under the supervision of one of the 17 district maintenance superintendents. These crews carry on their work from strategically located headquarters, making routine repairs, plowing snow, sanding slippery pavements, removing slides, fallen rock and trees, and patrolling their sections during stormy weather. They are alert at all times to give prompt attention to the needs of the roads and to the safeguarding of traffic. The foremen and superintendents are the

Slicing off the overhanging snow cornice on the Mt. Hood Highway.

representatives of the Highway Department most often contacted by residents and travelers.

Extra gang crews for pavement repair, oiling, bridge repair, sign installation, and traffic line striping, are organized independently of the section maintenance crews to perform their particular types of repair work.

The district maintenance and bridge superintendents organize and supervise the crews and equipment, order materials and supplies, and in general handle all operations in their respective districts under the direction of the five division engineers.

The total number of maintenance employees including offices, radio, shops and field was 1,773 in September, 1954 compared with 1,824 in September, 1953. A constant, sincere effort has been made to reduce the cost of maintenance without lowering standards.

In addition to the general maintenance work performed by state forces, some contract maintenance has been done such as part of the re-oiling of highways and repainting of major bridges. The total quantity of maintenance rock produced by contract in 1953 was 530,361 cubic yards and rock purchased from commercial plants was 233,710 cubic yards. Asphalt, gasoline, oil and tires are purchased by annual contract on competitive bids.

Surface Maintenance

Oregon's plan of patching pavement with hot asphaltic mix produced by portable plants has proven most effective for repair of breaks, and restoration of smooth riding quality. Two new dryers were purchased in the spring of 1954 which increased capacity of these two plants by 15,200 tons or 27 per cent. There were seven paving plants sent out in 1954. They produced 175,700 tons at a cost of $8.81 per ton in place, a reduction of 15 cents per ton over 1953.

Five oil crews in 1952 were reduced to three in 1953 and they placed 1,698,000 gallons of asphalt in 1953 and 1,602,500 in 1954. Cost in 1954 was one cent per gallon less than in 1953.

Unit Oiling Costs for 1953

Work			Total Cost	
Specification	Thickness	Miles	Per Mile	Per Sq. Yd.
O-31	3/16"	119.8	$ 891	$ .076
O-30	3/8"	100.6	1,460	.124
DO-30	1/2"	182.9	1,963	.164
O-9	3/4"	18.9	3,878	.331

Cost per mile has been adjusted to a 20-foot width.

Bridge Maintenance

The maintenance and repair of some 2,200 bridges of all types, on the highway system and on park roads, was carried on during the biennium, part by state force, and part by contract. Approximately $150,000 each year of the biennium was expended on contract bridge maintenance, for bridge painting, redecking and replacement, and fender and dolphin renewal. Approximately $600,000 each year was expended on state force maintenance of concrete, timber, and steel structures. In addition to routine maintenance and repair, nineteen state force crews expended approximately $150,000 each year on bridge betterment work, such as channel protection, rip rap, and widening of both timber and concrete structures. Many decayed timber box culverts, installed in the early days when timber only was available, are being replaced each year with permanent pipe or box culverts.

Each year of the biennium, approximately thirty small decayed timber bridges or cattle passes were replaced with permanent culverts and fills. Permanent type materials such as treated timber, concrete, or steel are being utilized wherever justified in renewing timber structures. A precast concrete stringer and deck section, developed by our bridge designers, is being successfully utilized to obtain permanent type replacement trestle structures which can be constructed under traffic without the need of expensive detour bridges. The state is still maintaining twenty-five timber truss bridges with spans varying from 40 feet to 160 feet in length. During the biennium, eight timber trusses of this type have been replaced with either concrete or steel structures. It is anticipated that all of these hazardous structures will be rebuilt in the next four years.

Steel shear rails have been placed on many narrow steel through truss bridges to protect them from collision damage from heavy trucks.

Drainage Tunnels

Bridge crews and tunnel crews are both employed in the maintenance of over 16,000 linear feet of drainage tunnels constructed under the highways to drain and stabilize slide areas.

Drawbridges

There are 25 drawbridges on the State Highway System, all operated by State employees. Of the 25, five are operated full time, one part time, and nineteen on call, as required by War Department Regulations. One of these is the Interstate bridge over the Columbia River between Portland, Oregon, and Vancouver, Washington, which is operated on a cooperative basis with the State of Washington, the State of Washington reimbursing the State of Oregon for half the cost.

Ferries

Two small free ferries on highway routes at Enegren, on Coos River and at Wilsonville, on the Willamette River, which were formerly operated by contract, have both been replaced by new bridges; Enegren in December, 1952, and Wilsonville July 1, 1954.

The Astoria-Megler Ferry was taken over by the State June 1, 1946, and since that date has been operated as a toll ferry, forming an important interstate link on U.S. Route 101. Tolls are set to cover most of the cost for operation and depreciation. Three ferry boats are operated, MV Tourist II, MV Tourist III, and MVMR Chessman, the latter constructed by the State in 1948, and named in honor of a former Highway Commissioner and prominent citizen of Astoria. The traffic load varies from 3,500 vehicles and 5,700 passengers in January to 26,000 vehicles and 53,000 passengers in August, the peak tourist month. Traffic reached a peak in the summer of 1952 and has been declining slightly since. Tolls have not been increased so operation shows a deficit in past two years.

Salt Creek flood in December, 1953, washed out a section of the Willamette Highway, State Route 58, Lane County.

Buildings

The State bridge crews also maintain and repair state owned office and storage buildings throughout the State. The State owns sites and buildings that provide office and storage space for Salem headquarters, five division headquarters, seventeen district headquarters, one hundred twenty-nine section headquarters, five equipment repair shops and other units of the maintenance organization.

At twenty-eight isolated maintenance stations, seventy-seven housing units are furnished employees at reasonable rentals. At four mountain summit stations, trailer shelters have been provided to protect trailer houses from the heavy snow load and thus employ seasonal employees who have provided themselves with trailer houses. At twenty-three locations, office facilities are furnished the State Police; during the biennium new quarters having been provided at Tillamook, Bend, Roseburg, Ontario, and Pendleton. At fifty-six locations, truck scales and scale houses are maintained for use by weigh-masters and State Police.

Signs, Signals and Traffic Lines

Installation and maintenance of signs, signals and traffic lines are performed by state crews under supervision of an assistant maintenance engineer. In the sign shops at Salem the signs are made up, paint and other materials are stored and posts and lumber seasoned.

The traffic stripe down center of the highway is appreciated by motorists and is very important for safety. Fifteen sign crews, eight crews of electricians for signals and lights and five striping crews operated in 1954. Unit costs for traffic line in 1953 were—solid yellow, 6,741 miles, at $21.00 per mile; reflectorized line, 345 miles at $53.18; dashed line, 2,859 miles at $9.31; no passing white line, 596 miles at $19.00, all four inches wide.

Equipment

The Maintenance Division furnishes and repairs all highway equipment. Rent is charged on each piece to cover depreciation, repair and maintenance. Repairs are made at five shops located at Salem, La Grande, Bend, Klamath Falls, and

Coquille. There is a superintendent in charge of each shop all under direction of the equipment superintendent at Salem. Supplies and parts are purchased, stored and dispensed from storerooms in connection with the shops. A new shop at Bend was completed for service in 1954.

Expenditures for the purchase of new equipment, cars, trucks, graders, etc., in 1953 was $834,000, in 1954 will run $797,000 and the budget for 1955 is $700,000. Scrap metal, tires and worn out equipment are sold quarterly on bids and a total of $101,265 was received from such sales during past two years.

Radio

The radio system has 34 base stations, 188 mobile units for highway vehicles and about 250 for State Police. Change over from A.M. to F.M. system for better reception is nearly complete. Radio communication is essential in disasters like storms, slides, fires and wrecks, is useful in the daily collection of road condition reports during the winter, and in keeping contact with the drivers of cars and trucks on the road.

Accident Prevention

One man has been assigned to accident prevention in the entire department, and the most important thing accomplished has been to make everyone more accident conscious. Best results were obtained by holding safety meetings with the individual crews at the maintenance headquarters, and on the roadside. All drivers have been given driver's reaction tests which have created considerable interest in distances required to stop vehicles. Safe Driver Cards are issued to drivers who operate for the entire calendar year without a chargeable accident.

Inspections have been made of maintenance sheds to get fire extinguishers and first aid kits placed in proper locations, grinders guarded, worn-out tools replaced, and other hazards removed. Inspections of equipment have been made with particular attention to mirrors, windshields, swipes and brakes; also several improvements have been made on equipment.

Recently completed section of the Oregon Coast Highway south of Cannon Beach, Clatsop County.

The vehicle accident frequency dropped from 14.1 (per million vehicle miles) for first half of 1953 to 12.5 for first half of 1954. During the same two periods there was a reduction of 34 in personal injuries. Two fatal accidents, however, this year have made Industrial Accident Commission claim costs only $200 less.

Cost Statements

Itemized statements, showing the "per mile" cost of maintenance for both the primary and secondary systems during each of the calendar years of 1952 and 1953 and showing the number of miles of highway maintained, appear in accompanying tables.

TABLE XIV

Costs of Maintaining Primary State Highways
Calendar Year 1952

Kind of Work	General Maintenance	Special Maintenance	Totals	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 154,746.43	$	$ 154,746.43	310	$ 499
Asphalt pavement repairs	425,115.12	30,047.40	455,162.52	815	558
Bituminous macadam repairs	859,822.45	93,183.72	953,006.17	1,276	747
Oiled macadam repairs	2,039,460.99	66,068.26	2,105,529.25	2,280	923
Untreated and graded repairs	39,478.12		39,478.12	129	306
Base and sub-base repairs	11,239.70		11,239.70		
Shoulders					
Blade, patch, retreat	560,112.28	211.67	560,323.95		
Sidewalks, islands and curbs	6,704.67		6,704.67		
Drainage					
Ditches	429,567.61		429,567.61		
Drainage tunnels	24,720.19		24,720.19		
Pipe culverts, siphons, flumes	98,239.66		98,239.66		
Structures					
Box culverts and bridges 20 ft. and under in length	29,070.30		29,070.30		
Bridges longer than 20 ft.	385,827.32	159,082.40	544,909.72		
Guard fence and sight posts	157,901.14	84.00	157,985.14		
Tunnels, roadway	4,489.96		4,489.96		
Retaining walls, dikes, etc.	13,851.99		13,851.99		
Roadbed and Right of Way					
Remove weeds, brush and debris	540,510.09		540,510.09		
Noxious weed control	31,947.26		31,947.26		
Landscaping	65,810.73		65,810.73		
Slides, roadbed and slopes	263,386.48	8,160.76	271,547.24		
R/W fence and markers, mileposts	2,705.16		2,705.16		
Road approaches	13,491.92		13,491.92		
Traffic Service					
Traffic signals	30,224.27		30,224.27		
Signs and highway markers	180,655.19		180,655.19		
Traffic lines	288,226.92		288,226.92		
Snow removal	731,459.50		731,459.50		
Sanding slippery pavement	445,446.02		445,446.02		
High water: flag and stake	19,703.37		19,703.37		
Highway illumination	47,647.27		47,647.27		
Road magnet operation	6,536.56		6,536.56		
Road broom operation	56.37		56.37		
Subtotals	$7,908,155.04	$ 356,838.21	$8,264,993.25		
Maintenance superintendence	218,882.90		218,882.90		
Totals	$8,127,037.94	$ 356,838.21	$8,483,876.15	4,810	$1,764

TABLE XV

Costs of Maintaining Secondary State Highways
Calendar Year 1952

Kind of Work	General Maintenance	Special Maintenance	Totals	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 20,033.37	$	$ 20,033.37	45	$ 445
Asphalt pavement repairs	84,334.63	.....	84,334.63	267	316
Bituminous macadam repairs	27,340.47	.....	27,340.47	94	891
Oiled macadam repairs	862,996.62	67,853.56	930,850.18	1,487	626
Untreated and graded repairs	293,976.68	.....	293,976.68	605	486
Base and sub-base repairs	21,224.12	.....	21,224.12	.....	.....
Shoulders					
Blade, patch and retreat	110,339.81	.....	110,339.81	.....	.....
Sidewalks, islands and curbs	2,238.70	.....	2,238.70	.....	.....
Drainage					
Ditches	165,418.59	.....	165,418.59	.....	.....
Drainage tunnels	1,285.99	.....	1,285.99	.....	.....
Pipe culverts, siphons, flumes	52,907.88	.....	52,907.88	.....	.....
Structures					
Box culverts and bridges 20 ft. and under in length	32,907.84	.....	32,907.84	.....	.....
Bridges longer than 20 ft.	173,972.62	8,129.25	182,101.87	.....	.....
Guard fence and sight posts	32,277.10	.....	32,277.10	.....	.....
Tunnels, roadway	.....	.....	.....	.....	.....
Retaining walls, dikes, etc.	788.07	.....	788.07	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	186,166.39	.....	186,166.39	.....	.....
Noxious weed control	10,072.46	.....	10,072.46	.....	.....
Landscaping	8,466.66	.....	8,466.66	.....	.....
Slides, roadbed and slopes	56,408.97	.....	56,408.97	.....	.....
R/W fence and markers, mileposts	401.81	.....	401.81	.....	.....
Road approaches	5,449.30	.....	5,449.30	.....	.....
Traffic Service					
Traffic signals	3,997.13	.....	3,997.13	.....	.....
Signs and highway markers	49,803.11	.....	49,803.11	.....	.....
Traffic lines	54,322.45	.....	54,322.45	.....	.....
Snow removal	253,835.71	.....	253,835.71	.....	.....
Sanding slippery pavements	46,333.17	.....	46,333.17	.....	.....
High water: flag and stake	8,975.61	.....	8,975.61	.....	.....
Highway illumination	715.54	.....	715.54	.....	.....
Road magnet operation	1,940.71	.....	1,940.71	.....	.....
Road broom operation	.....	.....	.....	.....	.....
Subtotals	$2,568,931.51	$ 75,982.81	$2,644,914.32	.....	.....
Maintenance superintendence	71,105.05	.....	71,105.05	.....	.....
Totals	$2,640,036.56	$ 75,982.81	$2,716,019.37	2,498	$1,087

TABLE XVI

Costs of Maintaining Primary State Highways
Calendar Year 1953

Kind of Work	General Maintenance	Special Maintenance	Totals	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 145,052.41	$	$ 145,052.41	296	$ 490
Asphalt pavement repairs	442,819.99	.....	442,819.99	1,048	423
Bituminous macadam repairs	663,103.69	249.41	663,353.10	1,479	449
Oiled macadam repairs	1,536,162.34	135,796.66	1,671,959.00	1,913	874
Untreated and graded repairs	84,877.31	19,540.83	104,418.14	101	876
Base and sub-base repairs	11,445.65	.....	11,445.65	.....	.....
Shoulders					
Blade, patch, retreat	647,436.26	.....	647,436.26	.....	.....
Sidewalks, islands and curbs	6,683.47	.....	6,683.47	.....	.....
Drainage					
Ditches	468,729.82	.....	468,729.82	.....	.....
Drainage tunnels	35,398.76	.....	35,398.76	.....	.....
Pipe culverts, siphons, flumes	109,508.20	.....	109,508.20	.....	.....
Structures					
Box culverts and bridges 20 ft. and under in length	38,595.13	.....	38,595.13	.....	.....
Bridges longer than 20 ft.	310,756.58	144,143.82	454,900.40	.....	.....
Guard fence and sight posts	117,104.23	.....	117,104.23	.....	.....
Tunnels, roadway	10,530.69	.....	10,530.69	.....	.....
Retaining walls, dikes, etc.	18,643.30	.....	18,643.30	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	660,513.82	.....	660,513.82	.....	.....
Noxious weed control	39,570.30	.....	39,570.30	.....	.....
Landscaping	48,091.31	.....	48,091.31	.....	.....
Slides, roadbed and slopes	592,400.99	542.00	592,942.99	.....	.....
R/W fence and markers, mileposts	1,941.74	.....	1,941.74	.....	.....
Road approaches	12,821.45	.....	12,821.45	.....	.....
Traffic Service					
Traffic signals	43,925.81	.....	43,925.81	.....	.....
Signs and highway markers	213,300.36	.....	213,300.36	.....	.....
Traffic lines	292,471.86	.....	292,471.86	.....	.....
Snow removal	562,584.83	.....	562,584.83	.....	.....
Sanding slippery pavement	314,096.29	.....	314,096.29	.....	.....
High water: flag and stake	30,364.45	.....	30,364.45	.....	.....
Highway illumination	57,012.37	.....	57,012.37	.....	.....
Road magnet operation	6,188.01	.....	6,188.01	.....	.....
Road broom operation	115.90	.....	115.90	.....	.....
Subtotals	$7,522,247.32	$ 300,272.72	$7,822,520.04	.....	.....
Maintenance superintendence	239,516.72	.....	239,516.72	.....	.....
Totals	$7,761,764.04	$ 300,272.72	$8,062,036.76	4,837	$1,667

TABLE XVII

Costs of Maintaining Secondary State Highways
Calendar Year 1953

Kind of Work	General Maintenance	Special Maintenance	Totals	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 20,718.60	$	$ 20,718.60	44	$ 471
Asphalt pavement repairs	77,846.15	.....	77,846.15	315	247
Bituminous macadam repairs	44,914.70	.....	44,914.70	71	633
Oiled macadam repairs	864,639.56	18,750.28	883,389.84	1,520	581
Untreated and graded repairs	301,246.16	29,364.60	330,610.76	565	558
Base and sub-base repairs	19,602.94	.....	19,602.94	.....	.....
Shoulders					
Blade, patch and retreat	144,766.64	.....	144,766.64	.....	.....
Sidewalks, islands and curbs	341.27	.....	341.27	.....	.....
Drainage					
Ditches	170,206.57	.....	170,206.57	.....	.....
Drainage tunnels	5,385.36	.....	5,385.36	.....	.....
Pipe culverts, siphons, flumes	45,781.50	.....	45,781.50	.....	.....
Structures					
Box culverts and bridges 20 ft. and under in length	22,413.69	.....	22,413.69	.....	.....
Bridges longer than 20 ft.	222,462.67	.....	222,462.67	.....	.....
Guard fence and sight posts	21,551.17	.....	21,551.17	.....	.....
Tunnels, roadway	.....	.....	.....	.....	.....
Retaining walls, dikes, etc.	9,184.18	.....	9,184.18	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	209,579.87	.....	209,579.87	.....	.....
Noxious weed control	13,150.66	.....	13,150.66	.....	.....
Landscaping	3,778.04	.....	3,778.04	.....	.....
Slides, roadbed and slopes	99,275.45	.....	99,275.45	.....	.....
R/W fence and markers, mileposts	1,016.16	.....	1,016.16	.....	.....
Road approaches	11,373.76	.....	11,373.76	.....	.....
Traffic Service					
Traffic signals	2,133.95	.....	2,133.95	.....	.....
Signs and highway markers	48,180.70	.....	48,180.70	.....	.....
Traffic lines	62,219.78	.....	62,219.78	.....	.....
Snow removal	188,964.36	.....	188,964.36	.....	.....
Sanding slippery pavements	23,069.79	.....	23,069.79	.....	.....
High water: flag and stake	11,379.98	.....	11,379.98	.....	.....
Highway illumination	894.47	.....	894.47	.....	.....
Road magnet operation	1,914.08	.....	1,914.08	.....	.....
Road broom operation	.....	.....	.....	.....	.....
Subtotals	$2,647,992.21	$ 48,114.88	$2,696,107.09	.....	.....
Maintenance superintendence	84,154.52	.....	84,154.52	.....	.....
Totals	$2,732,146.73	$ 48,114.88	$2,780,261.61	2,515	$1,105

Scale model of North Santiam Highway crossing over the Salem By-pass, Portland-Salem Expressway.

REPORT OF TRAFFIC ENGINEERING DIVISION

F. B. CRANDALL, *Traffic Engineer*

During this biennium traffic volumes on state highways throughout the State have shown an increase of 5.7 per cent. The continued increasing demands of motor transport and the acceleration of the highway construction program to meet these demands have restricted the Traffic Engineering Division to operational activities with a disproportionate amount of time and effort allowed for research. Organizationally, the Division has continued with the two principal sub-units—Traffic Control and Planning Survey. Expediency has frequently necessitated the interchanging of personnel in these two principal sub-units in order that the Division as a whole might keep pace with the work load.

Traffic Control

Assignments committed to the Traffic Control Section are made the subject of investigation and analysis, the scope of which depends upon the extent or seriousness of the particular problem. In all investigations the factual tools of the traffic engineer—traffic volumes, speeds, accident records and physical conditions—are used in order that the final recommendation will be based upon facts rather than opinion.

Accident data form one of the basic sources for information bearing on the treatment of the traffic problem, and in this direction the Division has continued to make both quantitative and qualitative analyses of motor vehicle accidents occurring on the roads and streets of the State. The quantitative analysis yields the mass of statistics relative to the frequency, severity, and type of motor vehicle accidents. The qualitative analysis points the way to proper corrective treatment and the results as reflected by previous treatment. Three publications, with respect to accidents, have been released during the biennium; viz: Technical Report 52-2, "1950 Accidents and Accident Rates"; Technical Report 53-2, "1951 Accidents and Accident Rates," and Technical Report 54-2, "1952 Accidents and Accident Rates."

The Secretary of State is the designated custodian of the original motor vehicle accident reports. However, the Highway Department is permitted use of the reports for the purpose of analyses. Information from the original accident reports is coded and transferred to IBM punch cards and processed on International Business Machine equipment with the punch cards being retained in the files of the Traffic Engineering Division. During the biennium 134,560 accidents were processed. During the previous two-year period, July 1, 1950 to June 30, 1952, 150,148 accidents were processed.

The use of the accident data is not confined to the Highway Department. The Secretary of State is supplied with regular monthly, semi-annual, and annual summaries useful to that office in driver-education and driver-improvement programs. During the latter part of the biennium, the Oregon State Police has been supplied with accident information useful to them in their selective enforcement program. The City of Portland receives service similar to the Secretary of State, such being reimbursable on a cost basis. Accident data are also supplied to cities and counties upon request.

As traffic volumes have increased, the need for speed control has become increasingly important. The Traffic Engineering Division serves as the investigative body for the State Speed Control Board in the instance of urban highway extensions, city streets and county roads, and for the State Highway Commission in the case of rural state highways.

During the biennium, numerical speed zones were recommended for 68 miles of rural state highway, 95 miles of urban highway extensions, 66 miles of non-highway city streets and 28 miles of county roads. In addition, negative recommendation was given for 68 miles of highway in 48 separate locations under the State Highway Commission's jurisdiction and 74 miles in 46 separate locations which fell in the State Speed Control Board's province. Another form of speed zone work consisted of posting advisory speeds on all horizontal curves that were safe at speeds up to and including 45 m.p.h. Some 5,400 miles of highway were treated in this respect.

The particular unit which handles speed zone assignments is also charged with the responsibility of investigating complaints which have to do with general traffic problems. Among these were requests for traffic signs, pavement markings, rural sidewalks, access control, sight distance improvements, time and delay studies, street and lot parking plans, intersection design and channelization and other related measures. To promote maximum safety for the motoring public on sections of highway where sight distance was less than 1,000 feet by reason of vertical curves, some 1,040 additional miles of highway were investigated and marked for no passing zones.

A major function of the Traffic Control Section is the investigation of need and the preparation of plans for traffic signal and illumination installations. In determination of the need for signals, the standard warrants as formulated by the American Association of State Highway Officials are observed. These warrants, which are contained in the "Manual of Uniform Traffic Control Devices," have national acceptance and define in detail the vehicular and pedestrian volumes, accident experience, et cetera, that an intersection must have to warrant signalization. During the biennium, investigation as to the warrant for signalization was conducted at 70 intersections involving 30 cities and eight rural locations. Investigations for the need of flashing beacons were also made at 22 intersections. Installation was approved for traffic signals at 25 intersections and for flashing beacons at 14 intersections. The illumination of critical rural intersections and major interchanges on new construction has created widespread interest in the past biennium. Investigations were conducted which resulted in the installation of 174 luminaire units at 51 locations.

The Traffic Control Section is also responsible for the preparation of plans and specifications for traffic signal, flashing beacon and illumination projects for the use of the Maintenance Division in the instance of state force projects or for the Bridge Division in the instance of contract jobs. The "Standard Specifications for Traffic Signal and Illumination Installation" has been published for the first time and will be used to govern all contract signal or illumination projects. Plans and specifications were prepared for 26 contract traffic signal projects

involving 66 intersections and for state force projects involving 12 intersections. Plans and specifications were also prepared for the flashing beacon and illumination projects mentioned above.

The construction of scale models has continued to be of great value in public education for new projects and to other divisions in the Highway Department. Latest models completed during the biennium were those for the North Santiam Junction with the Salem By-Pass, the new Interstate Bridge between Portland, Oregon, and Vancouver, Washington, and the new connection from Harbor Drive to Columbia and Jefferson Streets in Portland.

Although carried as a research project under the direction of the Bridge Division, the Traffic Engineering Division did conduct a Sign Legibility Study so that the Oregon State Highway Department could determine the comparative pure legibility of overhead illuminated directional signs presently in use with other signs using three basic types of reflecting material. The report of the findings are contained in Technical Bulletin No. 22, "Sign Legibility Study."

Planning Survey

The principal activity from the standpoint of personnel and money expenditures is the state-wide traffic Counting Program. During the past biennium the revised counting methods have been used to provide complete coverage on the State Highway Systems both the rural and urban portions, and the determination of vehicle miles on county roads has been started. This will be completed by the end of the year 1954. The procedure as outlined in the previous biennial report, to provide the necessary data for adjustment of several thousand short counts to average daily values, has been altered to the extent that a small number of the control stations have been relocated and a few of them have been consolidated to eliminate excess travel.

To provide continuous and detailed traffic information, 28 permanent automatic traffic recorders are now in operation. During the past biennium a permanent installation has been adopted which uses component parts as supplied by several

manufacturers. This type of installation has proven very satisfactory from an efficency standpoint and from an installation and maintenance cost standpoint. An initial savings of approximately $200.00 per installation has been realized using the Oregon Standard Permanent Traffic Recorder. This installation uses a magnetic type of detector for actuating the recording unit, which eliminates the necessity for adjusting for axle overcounts and also allows installation without disrupting the pavement.

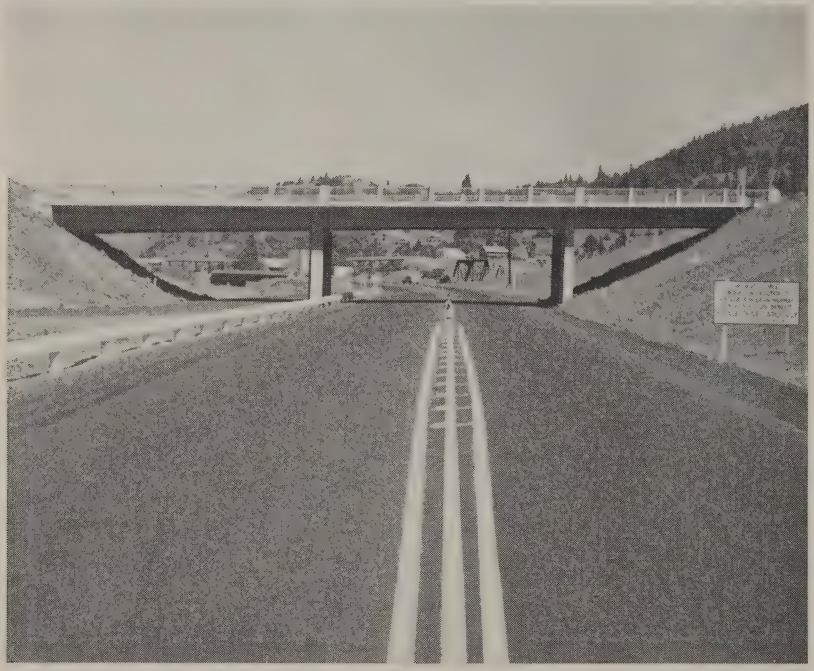
In addition to routine traffic count operations, approximately 200 counts were obtained for use in the Traffic Control Section in connection with special investigations.

The traffic count data are compiled in yearly bulletin form for intradepartmental use as well as distribution to outside agencies interested in this particular information. The most recently published report, Oregon State Highway Technical Report No. 54-1, tabulates the traffic data as obtained during the year 1953. In addition to the Technical Bulletin, a traffic flow map is prepared annually, the last flow map being for 1953.

A knowledge of the origin and destination of traffic is essential in determining probable usage and economic justification of projected new facilities. During the past biennium, Origin-Destination Studies using either driver interview techniques or license recording techniques have been conducted in the following cities: Albany, Ashland, Baker, Bend, Grants Pass, Medford, Pendleton and The Dalles. During this same period, comprehensive Traffic Studies were conducted and reports released for: Albany, Baker, Klamath Falls, La Grande and Medford. Surveys were started during the biennium which will be completed in the next biennium for Grants Pass and Roseburg.

Road inventory survey operations have been continued through the biennium. The prime purpose of this activity is to keep a complete and, insofar as possible, current record of all public ways in the State. In addition to establishing physical location and alignment of the road net, detailed information is obtained with respect to the roadbed section and roadside

culture, such as farm houses, residences, business and commercial establishments, et cetera. These data, when transferred to map form, find extensive use not only within the Highway Department but by other agencies as well. To date field inventory has been completed in some 15 counties in the State. The total mileage in the 15 counties that have been inventoried amounts to some 18,500 miles or approximately 30 per cent of the total mileage of public way within the State. The information as obtained in the field is entered on Cardex files for permanent and ready reference.



Looking east through the Mosier undercrossing structure showing traffic separators, U. S. 30 in Wasco County.

One of the final products and uses made of the inventory data is the preparation of the General Highway and Transportation Maps for counties. During the biennium six counties have been completed and the maps made available for distribution. This makes a total of ten counties complete. The

counties for which maps have been completed since 1948 are as follows: Benton, Clackamas, Clatsop, Coos, Hood River, Marion, Multnomah, Polk, Washington and Yamhill.

During the past biennium, map distribution has continued at a slightly accelerated pace wherein General Highway and Transportation Maps at ½" = 1 mile and 1" = 1 mile have been made available for sale to the public as well as used by other State agencies. During this period some 8,000 separate sheets of county maps were distributed.

The bridge inventory is a corollary part of the road inventory, with such field work as is done being performed by personnel of the Bridge Division. The bridge inventory work provides detailed records of the bridge structures on all public roads and highways inclusive of data on the general type, stream names, length of span, vertical and horizontal clearances, and construction features.

During the past biennium a limited amount of inventory work has been conducted to provide needed information for the Federal-Aid Secondary Highway System Study as conducted by personnel in the County-City Relations Division. These data and information are used as a basis for the allocation of Federal-Aid Secondary projects and for revision and possible extension of the Federal-Aid Secondary System.

The Road Costs and Earnings report which provides a continued record for the highway system in its entirety as well as component parts thereof, relates the sum total costs of the particular section or system to the revenue accruing in the form of user taxes and imposts. The relation of these two items results in an index or solvency quotient useful in programming moneys to the end that construction funds may be allocated in an equitable manner. Revisions of this report have been made during the past biennium to show the cost on the basis of today's dollar rather than at the time of original expenditure. This gives a more realistic comparison of the costs and earnings. Also to provide the more representative solvency quotient, seven-year average solvency quotients have been included in the report. The most recent report available is for 1951. The urgency of other work has caused this phase

to be retarded somewhat; however, every effort will be made in the coming biennium to bring this work up to date and keep it current.

A new phase of work in the Planning Section has been the development of a section to make economic studies of areas through which projected highway improvements may pass and the user benefit-cost analysis of alternate routes. For the economic phase of this study, all the natural resources of an area are investigated to determine its potential production and the transportation needs with respect to such potential. This information is then converted into equivalent vehicle movements necessary to transport natural resources and products from the location in which they are found in the field to the market centers for consumption. The results of this type of analysis are then correlated with ratios of the benefits to the motor vehicle users to the annual cost for alternate routes. This information provides another additional tool for the administrators of the Highway Systems in developing their construction programs. Studies of this nature have been completed in Grant County and the Lake of the Woods area in Jackson and Klamath Counties.

Over and above the major sub-phases of the Planning Survey operations as covered above, there is a multiplicity of continuing statistical compilations in the field of fuel consumption, vehicle registration, road mileage reports, truck weight studies, out of state vehicle studies, motor vehicle use studies, and local finance studies. These lesser endeavors are generally routine and continuing in nature and supply needed information necessary to proper and intelligent highway administration and the evaluation of current needs and programming for the future. There are many special studies of particular interest to the Federal Bureau of Public Roads, carried on at their request, and which are desired for use at the national level both in the field of research and legislation.

Continued research took place on a section of the Salmon River Highway west of Grand Ronde in cooperation with the Federal Bureau of Public Roads to determine the structural adequacy of the highway. No conclusions were reached during this biennium, merely an accumulation of data for analysis at a

later date. During the latter part of the biennium an Electronic Scale was installed in the Wilsonville-Hubbard Highway just south of the Aurora-Donald Road so as to obtain a complete recording of the weight of vehicles, their axle spacing, frequency of axle loads, and other related data on the section of this highway from the Pacific Highway East to the Marion County line. This section of highway is of Portland Cement Concrete, and since its construction in 1941 average traffic by volumes have been about 250 vehicles per day. With the opening of a portion of the Portland-Salem Expressway in the Fall of 1954, this section of highway will experience considerable increase in traffic especially heavy vehicles, affording an opportunity to evaluate the structural qualities and behavior of the existing highway when subjected to heavier traffic volumes.

A related service unit in the Traffic Engineering Division is the IBM Tabulating Section. This unit performs routine services in the processing of motor vehicle accident reports, accident rate data, truck weight data, foreign car survey data, road costs and earnings data, computation of vehicle miles, road inventory information, origin-destination studies, time studies, sign test studies, motor vehicle use studies, forest highway studies, sufficiency rating report, personnel records and a summary of weighmaster operations. During the past biennium a total of 2,835,000 cards were processed. In addition to work performed for the Highway Department, certain special studies were continued for the Legislative Interim Committee on Highways in connection with motor vehicle taxation studies.

New lift span bridge across Coos River, eliminating the old Enegren ferry crossing, Coos County.

REPORT OF MATERIALS DIVISION

G. W. HARRA, *Engineer of Materials*

During the past biennium the Materials Division has tested more than 57,000 individual samples of materials entering into Oregon highways. However, the real value of testing is not a question of enumerating the kinds and numbers of samples, but of properly interpreting the results of tests in the light of the use to be made of the materials tested and the conditions under which they are to be used. The purpose of the Materials Division is two fold; one of service in providing information concerning all materials of construction, the other of control in making certain the materials are used properly. In accordance with this purpose, the Materials Division performs four functions:

1. To determine the quality of materials and assure that only those materials that meet the specified requirements are used.
2. To determine the proportions in which materials are to be combined for economy, strength, and service with due consideration for conditions that exist at the time of construction as well as conditions that will exist in years to come.
3. To assure that the materials are used in the proportions designed, and to assure that the final product has the specified qualities of strength and endurance.
4. To conduct research on new materials, methods of test and testing equipment, and causes of failure.

Quality of Materials

Considering the first of these functions, it is indisputable that quality may be determined only by test. In order to perform such tests, the Division has been provided with a well-equipped laboratory at 2950 State Street, Salem. Because of the variety of types of material required to be tested, the laboratory is subdivided into several sections. The head of each section is highly specialized through training and experience to perform their particular type of testing and they have become authorities in their fields. Thus reliability of tests is assured.

An engineer is in charge of the soils section under whom are four engineers and aides employed full time, and several aides employed part time. Soil samples taken at various depths and at frequent distances apart on surveys of new alignments are tested for physical characteristics and bearing qualities. From the results of these tests the thickness of rock and pavement required to withstand the probable heavy loads is calculated.

Two engineers are employed full time in the chemical section in which samples of paints and traffic line lacquers are analyzed for ingredient content and physical characteristics. Controlled service tests of lacquers are made and new formulations developed by this section. Also, samples of cement, creosote, treated timber, zinc coatings, ferrous and non-ferrous metals are chemically analyzed for conformance with specifications.

The oil and asphalt section employs one engineer full time and two aides part time. In this section, samples of asphalt, asphaltic mixtures, asphalt coated materials, and lubricating oils are analyzed to determine their physical characteristics and conformance with specifications.

The fourth section employs three full time engineers and several aides during the construction season. Physical tests on fine and coarse aggregates, quarry rock, bituminous mixtures, Portland cement, reinforcing steel, and samples of concrete are made in this section.

One engineer is employed full time designating the various tests that are to be made on each sample as it is received. The reporting of results of test and the keeping records are done under the direction of an office engineer.

Regardless of the reliability of tests in the laboratory, the results are of no value unless they are also valid. Since a test result is valid only insofar as the sample is valid, the Materials Division receives only samples taken by qualified personnel. For this purpose an inspection office is maintained in Portland and two qualified engineers and an aide are employed to sample materials originating in that area. These inspectors also observe shipments of materials represented by the samples

and observe fabrication processes for conformance with various specified requirements. In the field, where the Materials Division is responsible for the outcome of mix designs, such as asphaltic concrete and Portland cement concrete, division employees are assigned to take samples. For other sampling, the Materials Division has issued a pamphlet which explains in detail the approved methods of sampling the various materials encountered.

Proportioning of Ingredients

From the results of tests of the ingredients of Portland cement and asphaltic concrete, the mix or proportions of ingredients that are to be used in each specific project is designed. This mix is designed on the basis of materials available which have been sampled at frequent intervals during manufacture. The Engineer of Materials and his assistant observe the actual construction and may change the mix to conform to changing aggregate characteristics or other construction conditions.

Inspection

In order to assure that materials are used in the proportions designed, the Materials Division employs eight engineers and aides full time as well as several part time aides. These inspectors are stationed at the various batching and mixing plants. The duty of these men is one of control. They check the batch weights, periodically test the aggregate for granulometric analysis and take samples of the finished product to be sent to the laboratory for test. Deviation from specified strengths and composition in these samples calls for immediate remedial action. The inspectors are responsible for the consistency of the mixture in conformance with the design requirements. Considerable leeway is given the inspector to change the mix to conform to minor changes in the materials. Severe adverse conditions, however, are immediately reported to Engineer of Materials who determines whether the mix should be changed to meet the conditions, or whether the conditions should be changed to meet the requirements. Mix design and inspection during the last biennium has applied to nearly two million tons of asphaltic concrete, representing an expenditure of several million dollars.

Research

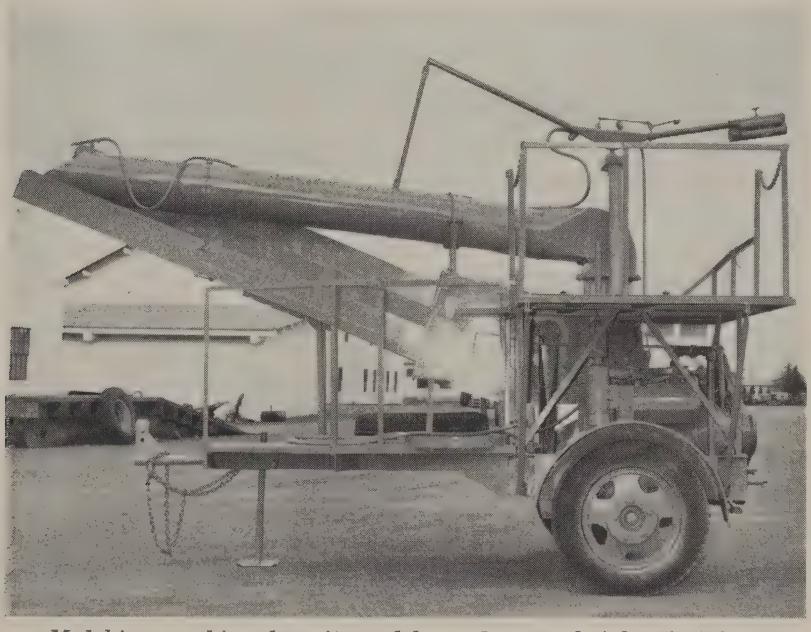
For the purpose of developing test methods and equipment for measuring pertinent qualities of materials here-to-fore unmeasured, of determining the cause of failures and evolving methods of construction that will eliminate undesirable qualities and failures, and of testing and evaluating new materials, the Materials Division maintains a research section in which are employed two full time engineers assisted in the winter months by the field inspectors. Emphasis this last biennium has been placed on asphaltic concrete. The section operates a core drill with which cores of all current projects as well as many from concrete laid in the past have been taken. Stability values, void ratios, asphalt brand and content, and mix proportions are being determined, and the results of test will be correlated with the service of the pavement. Other projects in process the last biennium have been degradation tests on quarry rock to measure the effects under repeated loads and to determine the characteristics of the degraded material; development of an asphalt meter to determine the asphalt content of asphaltic concrete rapidly in the field; tests on proprietary products such as water-proofing compounds and additive agents for Portland cement and asphalt designed to remedy certain inadequacies of the cements.

REPORT OF LANDSCAPE DIVISION

MARK H. ASTRUP, *Landscape Engineer*

The work of the Landscape Division has continued at an accelerated pace during the 1953-54 biennium. Mechanized seeding and mulching equipment have been used to their maximum capacity to control erosion on cut and fill slopes. The end results have improved the appearance of our highways and reduced maintenance costs on new construction.

After the first season's operation numerous changes and improvements were made in the mulching machine. These improvements increased the range of the machine from 30 to 60 feet slope distance and improved the mechanical aspects and roadability of the machine. The mulcher was also equipped with the manufacturer's attachments which permit the simultaneous addition of asphalt to the hay or straw on discharge at the end of the blower pipe. This has proven a practical and economical means of holding mulch on slopes under critical



Mulching machine deposits mulch on slopes to height of 50 feet.

wind conditions. Approximately 150 acres of slopes were mulched each year, including an outstanding success in stabilizing sand slopes by mulching and seeding in lieu of costly hand planting of vegetation.

Seeding of 104 construction projects has been completed or is under way, totaling 713 acres in 1953 and 733 acres in 1954. Some 20 varieties of grass seed have been used in varying proportions. A total of 15 tons of grass seed and 217 tons of fertilizer have been used during the biennium.

One major urban roadside improvement project, the Tillamook Street-Steel Bridge project in Portland, has been completed. Contracts for the major intersection at Roseburg and for the Second Street entrance to Hood River and for a portion of the Salem-Portland Expressway have been let.

The name Roadside Picnic Area has been changed to Roadside Rest Area to minimize any confusion with state park developments. Roadside Rest Area is also a more fitting description of their planned use; namely, for short stops to rest, relax, and recuperate from driver fatigue in a safe place off the highway. The use of rest areas has increased materially, and their facilities are popular with highway users. Units at Packard Creek on US-99, Hood River on US-30, Vance Creek on US-395, and at Fern Rock on the Wilson River highway have been completed in the biennium. Three other locations have been approved and are under construction. Forty units are now in operation. One location established in an undeveloped state park has reverted to park administration with their development of the area.

REPORT OF COUNTY AND CITY RELATIONS DIVISION

JOHN W. CATTRALL, *County and City Relations Engineer*

In general the County and City Relations Division functions as liaison agent between the State Highway Department, the 36 counties, and 215 functioning incorporated cities within the state. In addition, the County and City Relations Division has been approved by the Federal Bureau of Public Roads to function as a "secondary road unit" as required in section 2 of the Federal-Aid Road Act of 1950. This section of the 1950 act provides that each state shall establish an administrative and engineering unit functioning within the State Highway Department organization and charged primarily with the duty of establishing and maintaining cooperation between the State Highway Department and the counties in the selection of extensions to the Federal-Aid Secondary System, in the selection of projects and determination of the specifications for the improvement of projects, and in the supervision of the construction and maintenance of such projects.

Specifically, the duties and functions of the County and City Relations Division may be broken down as follows:

Administration of the Federal-Aid Secondary System

This system is presently comprised of some 3,249 miles of State Highways and 1,718 miles of County Roads. Only highways or roads designated as part of this system are eligible for projects partially financed from Federal-Aid Secondary funds as appropriated by Congress. The system is subject to revision as agreed upon by the state, counties, and Federal government. Federal law and regulation require cooperation and agreement between the State Highway Department and the various county courts in all matters pertaining to system revision, selection of projects for construction, and determination of specifications for these projects. The County and City Relations Division maintains complete records of the approved system and carries on all negotiations with counties as required to work out state-county agreement on system revisions, on the selection of projects, and on the determination of specifications.

County Federal-Aid Secondary Program

Beginning with the Federal fiscal year of 1954, Federal regulation requires that 50 per cent of Federal-Aid Secondary funds be spent on the County Road portion of the Federal-Aid Secondary System. An allocation of funds will be made to the individual counties based on the formula developed by the Association of Oregon Counties and approved by the State Highway Commission. This formula provides that 25 per cent of the funds available to the counties shall be divided equally among the counties and that the remaining 75 per cent of these funds shall be divided 80 per cent according to rural population and 20 per cent according to county road mileage as shown by the most recent records of the State Highway Department. Rural population of a county is to be determined by subtracting from the total population as shown by the latest Federal census, the populations of cities having populations greater than 5,000.

The county Federal-Aid Secondary program policy and procedure have not been changed and will continue in effect during the fiscal years 1956 and 1957. The State Highway Commission will pay 100 per cent of preliminary engineering costs and the counties will pay 100 per cent of the right-of-way and material sources costs. Both of these costs will be over and above the state and county participation in the Federal-Aid construction projects. This will permit all available Federal funds to be applied towards construction costs with the state and county each paying 50 per cent of all costs in excess of Federal funds. This will result in participation in total construction costs on the basis of approximately 60 per cent Federal funds, 20 per cent state funds, and 20 per cent county funds.

A brief description of the county Federal-Aid Secondary projects is contained elsewhere in this report. The following tabulation shows each county's estimated allotment of Federal-Aid funds, the state and county match money required, and the estimated amount available for programming of projects.

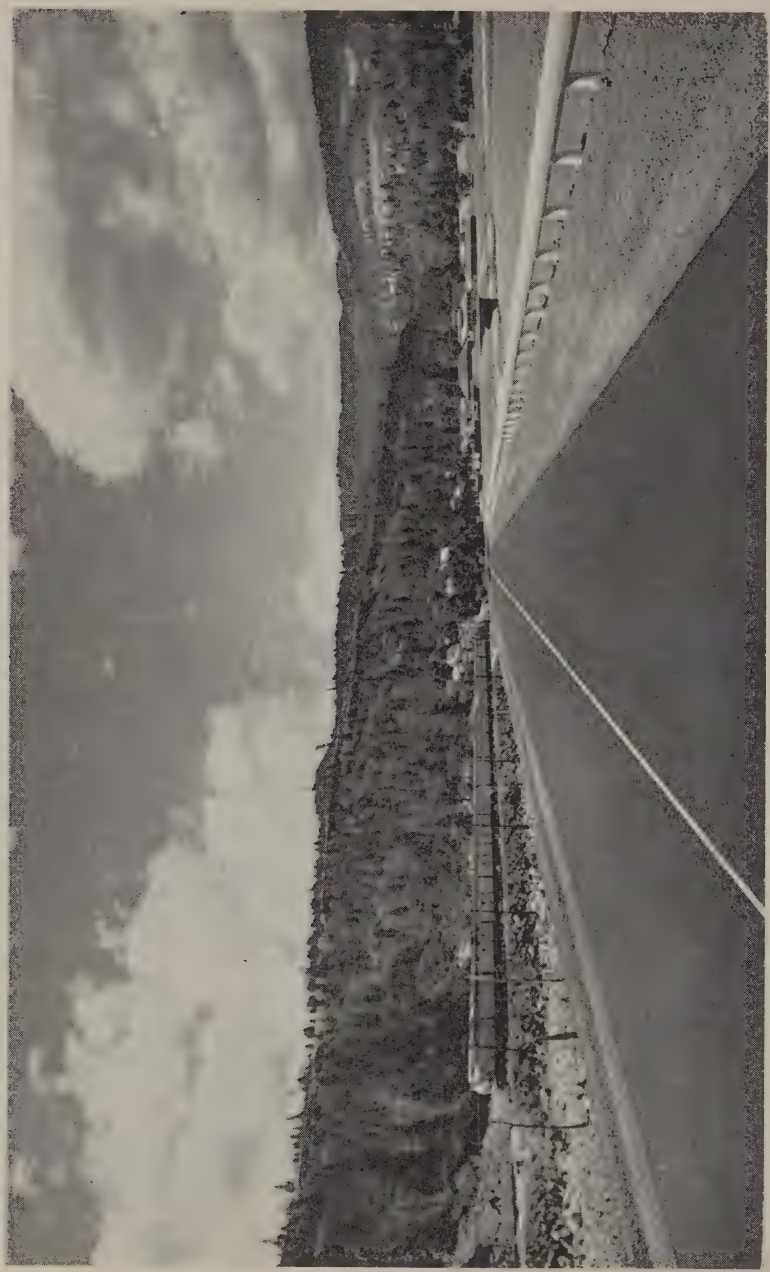
TABLE XVIII

County Road Portion of 1956 FAS Funds

County	Federal Funds	Match Money		Total for Programming
		State	County	
Baker	$ 34,213	$ 11,394	$ 11,393	$ 57,000
Benton	36,387	12,306	12,307	61,000
Clackamas	119,323	39,839	39,838	199,000
Clatsop	38,436	12,782	12,782	64,000
Columbia	46,603	15,698	15,699	78,000
Coos	56,288	18,856	18,856	94,000
Crook	30,520	10,240	10,240	51,000
Curry	22,228	7,386	7,386	37,000
Deschutes	37,948	12,526	12,526	63,000
Douglas	80,203	26,899	26,898	134,000
Gilliam	23,650	7,675	7,675	39,000
Grant	27,900	9,550	9,550	47,000
Harney	32,568	10,716	10,716	54,000
Hood River	31,161	10,419	10,420	52,000
Jackson	64,037	21,482	21,481	107,000
Jefferson	26,688	9,156	9,156	45,000
Josephine	39,564	13,218	13,218	66,000
Klamath	53,543	17,728	17,729	89,000
Lake	35,174	11,913	11,913	59,000
Lane	126,403	42,299	42,298	211,000
Lincoln	44,066	14,467	14,467	73,000
Linn	71,730	24,135	24,135	120,000
Malheur	60,734	20,133	20,133	101,000
Marion	101,470	33,765	33,765	169,000
Morrow	29,851	10,074	10,075	50,000
Multnomah	144,046	47,977	47,977	240,000
Polk	50,992	17,004	17,004	85,000
Sherman	20,459	6,771	6,770	34,000
Tillmook	39,105	12,947	12,948	65,000
Umatilla	75,897	25,552	25,551	127,000
Union	29,934	10,033	10,033	50,000
Wallowa	29,307	9,846	9,847	49,000
Wasco	29,544	9,728	9,728	49,000
Washington	93,861	31,570	31,569	157,000
Wheeler	20,751	7,124	7,125	35,000
Yamhill	53,612	17,694	17,694	89,000
Total	$1,858,196	$ 620,902	$ 620,902	$3,100,000

Total Federal Funds	$3,772,987
Less for Planning Survey (1½ Per Cent)	56,595
Total for Construction	$3,716,392
County Road Portion (50 Per Cent)	1,858,196
Required Match Money	
State Funds	620,902
County Funds	620,902
Total County Road FAS Fund	$3,100,000

NOTE: Fiscal year 1957 funds are estimated to be same as 1956.



New location along the Columbia River between Hood River and Mosier.

Supervision of Regular City Allocation of Highway Revenues

By Oregon law each incorporated city of less than 1,000 population must obtain approval by the Highway Engineer of its plan of expenditure of its semi-annual allocation of highway revenues (known as the State Tax Street Fund) prior to expending same. The same applies to cities of over 1,000 population if they accumulate State Tax Street Funds for more than two years from the date of receipt. The County and City Relations Division is charged with all direct negotiations with cities in the administering of this portion of the law and makes recommendations to the Highway Engineer according to its findings. A standard form of resolution has been developed upon which each city submits its plan of expenditure upon receipt of its semi-annual allocation. The plan as submitted is investigated and recommendations made accordingly. There are 119 functioning incorporated cities of less than 1,000 population in the state. State Tax Street Funds in the amounts of $718,741.14 and $8,480,621.94 were paid to cities of less than and more than 1,000 population, respectively, during the biennium beginning July 1, 1952, and ending June 30, 1954.

Special $250,000 City Allotment Fund

By Oregon law there is withheld from the regular State Tax Street Fund $250,000 annually to be administered by the State Highway Commission and expended upon city streets not a part of the State Highway System and which have been damaged due to heavy and unusual industrial traffic or large increases in population. Applications for street improvements received from the various cities are investigated by this division, estimates of costs prepared, and a program report submitted annually to the Highway Engineer for presentation to the Highway Commission. This program report contains a complete summary of all applications with recommendations as to the qualification of each. After the Highway Commission has approved an annual program within the limits of the funds, the County and City Relations Division works out details for a written agreement covering each approved project and obtains execution of the agreement by the appropriate city officials.

Special City Allotment Projects Approved for Construction from 1951 Fund Status June 30, 1954

City	Total	State	City
Bay City	$ 15,020.63	$ 15,003.00	$ 17.63
Brownsville	10,562.63	10,562.63	.....
*Carlton	3,517.61	3,517.61	.....
Canyonville	5,444.82	5,444.82	.....
Dallas	10,576.18	10,576.18	.....
Dufur	8,379.08	8,379.08	.....
Enterprise	13,599.47	13,599.47	.....
Halsey	12,781.69	12,781.69	.....
Island City	11,891.04	11,891.04	.....
Madras	11,862.57	11,862.57	.....
Mill City	11,345.07	11,345.07	.....
Oakridge	13,434.60	13,434.60	.....
Ontario	14,514.96	14,514.96	.....
Prairie City	11,700.67	11,700.67	.....
Reedsport	15,911.71	15,000.00	911.71
Rogue River	12,598.54	12,598.54	.....
Stanfield	22,141.75	15,000.00	7,141.75
Stayton	1,561.37	1,561.37	.....
Sweet Home	17,599.56	15,002.88	2,596.68
Turner	11,686.89	11,686.89	.....
Umatilla	9,536.93	9,536.93	.....
Wallowa	16,294.22	15,000.00	1,294.22
	$261,961.99	$250,000.00	$ 11,961.99

* Carlton carried as combination 1951 and 1952 fund project. See 1952 tabulation for $11,202.11 balance of $14,719.72 total cost.

During this biennium 115 applications were received and investigated and 43 projects were approved by the Highway Commission for construction at a total cost of $650,100, $568,700 coming from the Special City Allotment Fund and $81,400 contributed by individual cities in additional cooperation.

The amounts of city allotment funds allotted to various cities in each of the years 1952 to 1954, inclusive, are given in an accompanying table.

Miscellaneous Agreements and Resolutions

Another function of the County and City Relations Division is to furnish basic data to the Legal Division for use in the preparation of various agreements and resolutions for county

Special City Allotment Projects Approved for Construction from 1952 Fund Status June 30, 1954

City	Total	State	City
Canby	$ 8,806.45	$ 8,806.45	$
Carlton	11,202.11	11,202.11	
Cornelius	10,957.58	10,957.58	
Elgin	17,236.75	15,000.00	2,236.75
Forest Grove	12,525.14	12,525.14	
Glendale	9,694.14	9,694.14	
Independence	13,996.53	13,996.53	
Ione	8,302.84	8,302.84	
Junction City	15,936.51	15,000.00	936.51
Lafayette	16,886.14	15,000.00	1,886.14
Lakeview	8,300.00	8,300.00	
Newport	12,373.26	12,373.26	
Oakland	9,725.91	9,725.91	
Phoenix	14,153.79	14,153.79	
Prescott	14,283.68	14,283.68	
Riddle	12,984.15	12,984.15	
Sherwood	5,381.52	5,381.52	
*Siletz	14,216.65	14,216.65	
Silverton	7,197.43	7,197.43	
Talent	11,070.48	11,070.48	
Toledo	9,652.10	9,652.10	
Yamhill	10,176.24	10,176.24	
	$255,059.40	$250,000.00	$ 5,059.40

* Siletz carried as combination 1952 and 1953 fund project. See 1953 tabulation for $389.29 balance of $14,605.94 cost.

or city execution as required by various State and Federal laws and regulations and to cover cooperative projects as agreed on from time to time by the Highway Commission and individual counties and cities. Also, execution by the appropriate county or city officials of each agreement and resolution prepared is obtained by this division. Projects up for contract award are carefully examined prior to each Highway Commission meeting and the required agreements or resolutions are determined at that time so that they may be prepared and executed before a contract is awarded.

In addition, the County and City Relations Division, when directed so to do by the State Highway Engineer, represents the Highway Department in numerous contacts with localized groups or organizations which have requested information.

Special City Allotment Projects Approved for Construction from 1953 Fund Status June 30, 1954

City	Total	State	City
Beaverton	$ 10,134.47	$ 10,134.47	$ .....
Brookings	16,500.00	15,000.00	1,500.00
Canby	11,439.73	8,439.73	3,000.00
Empire	12,071.10	12,071.10	.....
Gold Hill	14,391.93	14,391.93	.....
Heppner	18,176.56	15,000.00	3,176.56
Hubbard	4,056.24	4,056.24	.....
Long Creek	11,557.38	11,557.38	.....
Lostine	14,742.68	14,742.68	.....
Merrill	19,000.00	15,000.00	4,000.00
Milton-Freewater	11,994.01	11,994.01	.....
Molalla	8,812.51	8,812.51	.....
Monument	13,700.00	13,700.00	.....
Myrtle Point	11,477.47	11,477.47	.....
Nyssa	17,000.00	15,000.00	2,000.00
Philomath	8,606.74	8,606.74	.....
Redmond	11,299.82	11,299.82	.....
Sandy	15,042.52	15,000.00	42.52
Siletz	389.29	389.29	.....
St. Helens	23,054.99	15,000.00	8,054.99
Union	11,708.60	11,708.60	.....
Waldport	11,095.52	11,095.52	.....
	$276,251.56	$254,477.49	$ 21,774.07

NOTE: When final costs of all projects are determined, all State costs in excess of $250,000 will be transferred to the 1954 funds.

Special City Allotment Projects Approved for Construction from 1954 Fund Status June 30, 1954

City	Total	State	City
Amity	$ 16,800.00	$ 15,000.00	$ 1,800.00
Bay City	7,400.00	7,400.00	.....
Brownsville	18,000.00	15,000.00	3,000.00
Burns	13,500.00	13,500.00	.....
Carlton	16,500.00	15,000.00	1,500.00
Condon	20,000.00	15,000.00	5,000.00
Detroit	8,600.00	8,600.00	.....
Drain	14,700.00	14,700.00	.....
Gervais	10,000.00	10,000.00	.....
Glendale	10,200.00	10,200.00	.....
Lafayette	11,200.00	11,200.00	.....
Myrtle Creek	8,700.00	8,700.00	.....
Oakland	7,300.00	7,300.00	.....
Oakridge	13,200.00	13,200.00	.....
Reedsport	10,400.00	10,400.00	.....
Riddle	15,700.00	15,000.00	700.00
Sutherlin	12,900.00	12,900.00	.....
Turner	8,000.00	7,000.00	1,000.00
Umatilla	8,000.00	8,000.00	.....
Weston	19,200.00	15,000.00	4,200.00
	$250,300.00	$233,100.00	$ 17,200.00

NOTE: When final costs of all projects are determined, all State costs in excess of $250,000 will be transferred to 1955 fund.

REPORT OF LEGAL AND RIGHT OF WAY DEPARTMENT

CLIFTON W. ENFIELD, *Chief Counsel*

The Legal and Right of Way Department is responsible for all legal work of the Commission and for the acquisition of all real property required by the Commission for highway and park purposes. The accelerated highway construction program made possible by the sale of $72,000,000.00 of highway bonds, as authorized by the forty-sixth and forty-seventh legislative assemblies, has required the acquisition of more real property and the providing of more legal services during the past biennium than during any other biennium in the history of the Highway Department. The enlarged land acquisition program, and the accompanying prohibition or restriction of access to primary highways from abutting properties, has inevitably resulted in the ever increasing necessity of acquiring more and more real property by exercise of the right of eminent domain. During the past biennium it was necessary to commence condemnation proceedings for the acquisition of 12 per cent of the real property required by the Commission for highway and park purposes, resulting in the filing of 297 condemnation cases in the Circuit Courts of the State of Oregon, the trial of each of which cases requires an average of two and one-half days.

During the biennium between July 1, 1952, and June 30, 1954, the Legal and Right of Way Department acquired the following real properties:

Number of Parcels	Use	Cost
2,275	Right of Way	$ 9,769,118.61
136	Material Sources	441,638.05
21	Stock Pile Sites	39,528.10
22	Park Purposes	95,270.64
32	Miscellaneous, including Maintenance Sites, Radio Station Sites, Building Sites and Scale Sites	24,552.00
2,486	Total	$10,370,107.40

The Legal Division of the Legal and Right of Way Department has represented the Commission in the prosecution or defense of an unprecedented number of cases during the past

Looking west from the old highway to the new Route U. S. 30 between Rowena and The Dalles, Wasco County.

biennium, which litigation, in addition to condemnation cases, includes contractual, tort and real property actions and a variety of equity cases, summarized as follows:

Condemnation Litigation

	Number
Condemnation cases pending on July 1, 1952	115
Condemnation cases commenced	297
Condemnation cases tried	84
Cases settled	133
Condemnation cases pending June 30, 1954	195

Litigation Other Than Condemnation

	Number
Cases pending July 1, 1952	20
Cases commenced	111
Cases tried	16
Cases settled	29
Cases pending June 30, 1954	86

Supreme Court Cases

	Number
Cases pending July 1, 1952	2
Cases appealed during biennium	6
Cases dismissed during biennium	1
Cases in which opinions rendered	4
Cases pending June 30, 1954	3

In addition to representing the Commission in State and Federal Courts, the Legal Division has also represented the Commission in hearings before the Public Utilities Commissioner during the past biennium in the following matters:

	Number
Construction of Highway-railroad grade separation structures	22
Construction of Highway-railroad grade crossings	14
Installation of Highway-railroad automatic signals	4
Construction of Highway-private truck road grade crossings	2
Miscellaneous matter, such as grade separation clearances, general regulations, etc.	2
Number of petitions pending June 30, 1954	4

The office practice handled by the Legal Division during the past biennium has kept abreast of the increased activities

of the remainder of the Legal and Right of Way Department, the principal types of which practice are summarized as follows:

	Number
Construction contracts examined and approved	488
Miscellaneous agreements examined and approved	32
Agreements of all types prepared (not including real estate options, leases, deeds, and other real property instruments)	308
Resolutions of all types prepared	422
Insurance policies and certificates examined	116
Bills for proposed legislation prepared	44
Written opinions prepared	140

The Highway Department operates approximately 2,910 vehicles, including passenger cars, trucks, and highway construction and maintenance equipment, which vehicles are exposed to normal highway hazards and are occasionally involved in accidents that give rise to claims for damages by the

Pavement widened and flanked by curbing on U. S. 97 through Lapine, Deschutes County.

Commission against the drivers or owners of other vehicles. Highway facilities, such as bridges, guard rails, and sight posts, are frequently damaged by the collision of negligently operated vehicles and occasionally damage is done to bridges, bridge piers and dolphins by reason of the negligent operation of ships, tugs, barges and rafts, giving rise to claims by the Commission for damages to such highway facilities. Recovery is attempted in every such instance by the Legal Division; however, with respect to damage to highway facilities, attempts to recover have to be abandoned occasionally by reason of inability to identify the persons responsible for the damage where no eyewitnesses are available. The following is a summary of the activity of the Legal Division during the past biennium in the collection of claims against others:

	No.	Amount
Claims pending July 1, 1952	43	$12,111.50
Claims made July 1, 1952, through June 30, 1954	225	78,593.99
Totals	268	$90,705.49

	No.	Amount Collected	Amount Due	Amount Uncollectable	
Claims Collected					
In full	172	$35,032.85	$	$	
Compromise settlement	10	11,844.32		22,652.22*	
Installment payments	7	1,006.99	1,055.71		
Claims abandoned	11			2,184.01	
Claims pending July 1, 1954	68		16,929.39		
Subtotals		$47,884.16	$17,985.10	$24,836.23	
Totals	268				$90,705.49

* Of this total sum, $19,385.00 of a $21,885.00 claim for destruction of the Beaverton-Aurora Secondary highway bridge over the Tualatin River was uncollectable, and the entire insurance coverage available, in the total sum of $5,000.00, was exhausted in compromise settlements of the claims of the Highway Commission and Portland Gas & Coke Company.

The Legal and Right of Way Department is charged with the responsibility of clearing right of way, and other lands acquired for highway and park purposes, of buildings and other improvements in advance of highway construction and park development. If such buildings, improvements and personal property are capable of being moved or salvaged, it is offered for sale, usually at public auction. The Legal and Right of Way Department also has the responsibility of selling surplus land

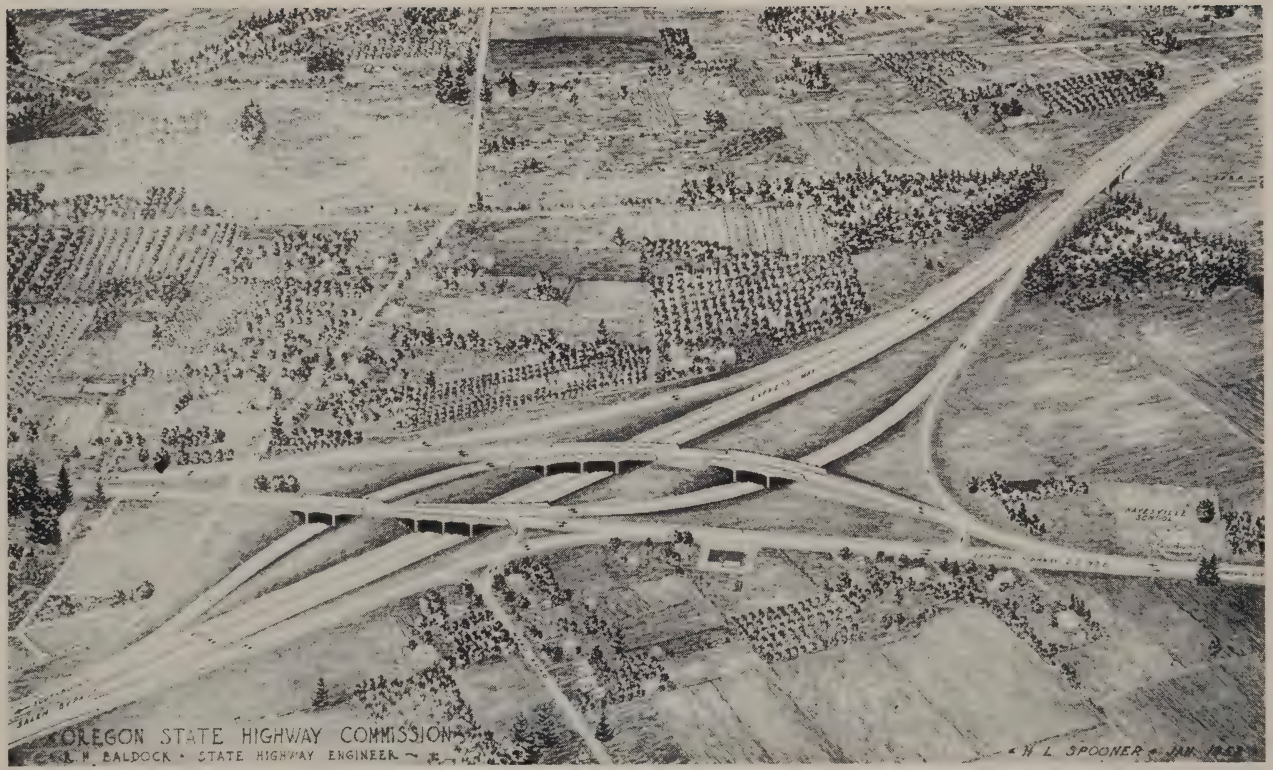
that is not required for public use, which sales are usually made at public auction after advertising, and also has the responsibility of renting or leasing lands and buildings not presently required for public use but retained by the State for future public use. These activities, during the past biennium, have produced the following receipts:

Rentals and Leases of land and buildings	$161,593.26
Sale of Buildings	266,573.00
Sale of Land	67,317.49
Sale of Timber	132,834.30
Miscellaneous Sales	19,107.61
Interdepartmental Sales, Personal Property	3,146.55
Total	$650,572.21

The biennial report for 1951-1952 makes reference to the case of State Highway Commission v. Deal, et al., 191 Ore. 661, 233 P.2d 242 (1951), wherein the Oregon Supreme Court, for the first time, said that the State in condemnation actions must pay interest from the date of taking of property, without distinguishing between the date of taking for the purpose of valuation, which is the date of filing the complaint, and the date of taking physical possession of the property. The opinion of the Legal and Right of Way Department, as expressed in this last biennial report, that the payment of interest should commence from the date of taking physical possession of property and not from the date of filing the complaint was sustained by the Supreme Court in the case of State Highway Commission v. Sauers, et ux, 199 Ore. 417, 262 P.2d 678 (1953).

In the leading case of State of Oregon, by State Highway Commission, v. Burk, et al., 200 Ore. 211, 265 P.2d 783 (1954), the Supreme Court rendered an opinion of national importance by holding that the denial of arising of rights of access from abutting property to a non-access highway, to be constructed upon right of way where no public highway previously existed, does not constitute a "taking" of an easement of access for which payment must be made in a condemnation proceeding. The Court clearly distinguished between the lack of

any detriment to a right of access which never existed, which is noncompensable, and the relevancy of the non-access character of the highway on the issue of severance damages to the owner's remaining property. The highest court of only one other state, California, had previously had this question presented for determination.



Artist sketch of Hayesville interchange on Expressway north of Salem, now under contract.

REPORT OF ACCOUNTING DIVISION

C. H. MAISON, *Auditor*

The Accounting Division is the administrative section responsible for the fiscal records of the State Highway Department. In the operation of this Division it is required that all revenues, receipts and expenditures be audited, approved and recorded; and that reports and information thereon be furnished the Highway Commission and other officials.

The Accounting Division was reorganized in essentially its present form in the year 1940. It was so designed that work would flow from one position to another, and from one section to another, in a "production line" system. Each position is designated to handle a particular phase of operation, but if a temporary overload occurs at any point, associated positions have been trained to assist, thereby maintaining a constant work flow.

During the biennium, both revenues and expenditures of the Highway Department reached an all time high. As set forth in other sections of this report, the increases resulted from sales of bonds as authorized by legislative action, and the expenditure of the bond funds on a construction program which reached full schedule during the period. This tremendous increase in construction necessitated related increases in activities of all other divisions of the Highway Department. The combined effect was noted by a corresponding increase in the volume of work reaching the Accounting Division. The organization as developed since 1940, and staffed with adequately trained and experienced personnel at all key points, proved completely adequate, and was able to handle the increased volume with but little increase in the number of employees. The following schedule compares the volume of certain factors with those of the two preceding periods.

	Period ending June 30, 1950	Period ending June 30, 1952	Period ending June 30, 1954
Net receipts after deducting statutory contributions	$ 58,443,542.91	$106,798,936.20	$130,633,992.58
Expenditures	69,272,349.49	84,064,130.56	122,560,144.56
Number of claims for payment from Highway Fund	43,935	46,927	53,044
Number of journal entries for internal transactions	6,285	8,182	8,140

Additional functions and duties were taken over by the Accounting Division during this two-year period. One involved keeping a record of fines assessed for violations of traffic and hauling laws, which is used as verification of amounts remitted by Justices of the Peace to the State Treasurer for credit to the Highway Fund. An individual record is kept for each Justice of the Peace and District Court Judge, to which is posted the violations cited to each court, the penalty imposed, and the amount of fines paid to the State Treasurer. These records are used primarily as a basis for determining revenues due the Highway Fund. They are also used by auditors, governmental and private, in audits of county fiscal records. Further, they frequently reveal erroneous procedures by some justices in assessing fines and in transmitting collected fines.

Probably the greatest single administrative problem encountered during the biennium, resulted from action of the 1953 Legislative Assembly in enacting legislation which brought State employees under the coverage of Federal Old Age and Survivors Insurance (Social Security). All employees were covered as of April 7, 1953, the date the enabling agreement with the Federal agency was signed. The act and agreement further provided that this coverage would apply to any State service retroactive to January 1, 1951. Statutory contributions were required for covered wages in this retroactive period, with the provision that the amount due from each employee would be transferred from his individual account with the Public Employes Retirement Board. If an employee had not become a member of the Retirement System, or if his contributions were insufficient to fully pay his retroactive liability, the employing agency was held responsible for collection from employee's current salary.

The Public Employes Retirement Board, designated to administer the act for the State, was required to determine the individual liability of each employee by combining information furnished from every State agency. It was foreseen that this would require considerable time. With this fact in mind, the Accounting Division established safeguards to insure that the liability of terminating employees was fully satisfied before final payment was made. This required an analysis of the

status of each terminating employee. His covered salaries from both the Highway Department and any other State employer was determined, his retirement account balance was ascertained, and any additional amount due for contributions was deducted from his final payment.

On June 23, 1953, a billing was received from the Retirement System showing an amount in excess of retirement credits of $11,237.69 due from 553 employees. Of this number, 241 had terminated prior to receipt of the billing, and the amounts due from them had been withheld, except for $45.99 from six employees. These six cases resulted from unavoidable situations beyond the control of the Accounting Division, and the cost to the Highway Department was less than ½ of 1 per cent. The balance of the amount due from employees was deducted from their June salaries, and the operation of Social Security coverage was then on a currrent basis.

The new law required that statutory contributions be withheld from current earnings up to a $3,600.00 annual maximum, and that quarterly reports of covered wages for each employee be furnished. By adaptation and extension of punch card procedures used previously for State retirement, the added requirements were adequately fulfilled.

Prompt payment of claims has always been an objective of the Accounting Division, and a continuing search is maintained for means of reducing the time required. One particular factor resulting in some delay was eliminated during the biennium. Favorable legislative action was taken on a Highway Department sponsored bill revising the form of the biennial budget. Under previous statutes, the budget was submitted and approved under the divisions of Salaries and Wages, General Operation and Maintenance, Capital Outlay, and Special Requests. Every voucher presented to the Secretary of State for payment had to show the distribution of the expenditure to the proper classification. The distribution was made from punch card records of cost distribution, and the results printed on a gummed sticker which was affixed to the original voucher. The sorting, preparing, and application of these stickers was a tedious and time consuming detail which frequently delayed processing of claims as much as two days. Under the revised

legislation, the biennial budget while submitted in considerable detail, is approved in total as far as expenditures; and no budgetary classification is required on vouchers paid by the Secretary of State. An awkward procedure was thus eliminated; and also the time of payment advanced, a fact much appreciated by claimants.

The current fund balance sheet of the Oregon State Highway Department as at June 30, 1954, is shown in accompanying table.

TABLE XIX

Current Fund Balance Sheet
As of June 30, 1954

ASSETS

Cash on deposit and on hand:		
Highway fund	$ 37,592,511.41*	
Revolving fund	826,426.92	
U. S. National Bank—Astoria Branch	4,779.65	
Change fund and petty cash	900.00	
Advance deposits account—contra	507,526.79	
Deposit with fiscal agency—contra	2,039,701.27	$ 40,971,846.04
Unreimbursed revolving fund expenditures		173,573.08
Receivables:		
Accounts receivable—miscellaneous	$ 35,550.06	
Rentals receivable	617.80	
Reimbursements receivable:		
Federal aid	446,050.30	
Cities and counties	159,485.47	
Total	$ 641,703.63	
Less reserve for losses	10,365.13	
	$ 631,338.50	
Revenues receivable	128,004.20	759,342.70
Inventories, unallocated field costs, etc.:		
Inventories	$ 6,552,877.51	
Unallocated field costs, gas, oil and grease	164,577.48	
Postage on hand	1,166.78	6,718,621.77
Deferred expenditures:		
Unamortized bond discount and premium—net		841,130.38
Amount to be provided for retirement of general debt—contra		69,637,500.00
Cost to complete construction and rock production in progress—contra		34,172,787.54
		$153,274,801.51

* Includes $32,000,000 of bond funds temporarily invested in U. S. Treasury Certificates.

TABLE XIX—Continued

LIABILITIES, RESERVES AND SURPLUS

Current liabilities:		
Vouchers payable	$ 1,208,339.08	
Contracts payable—retained amounts	2,147,214.07	
Employees' withholding tax and other deductions	143,170.79	
Matured bonds and interest coupons—contra	2,039,701.27	
Deposits on work to be performed—contra	507,526.79	
Contractors' claims payable	65,361.39	$ 6,111,313.39
Bonds payable		69,637,500.00
Reserve for city allotment projects		215,680.98
Deferred revenues		783,687.53
Cost to complete construction and rock production in progress—contra		34,172,787.54
Reserves and surplus:		
Reserve for revolving fund	$ 1,000,000.00	
Reserve for investment in inventories, etc.	6,718,621.77	
Reserve for amortization of bond discount and premium—net	841,130.38	
Current surplus	33,794,079.92	42,353,832.07
		$153,274,801.51

RECONCILIATION OF CURRENT SURPLUS

Current surplus as above	$ 33,794,079.92
Contracts payable—retained amounts	2,147,214.07
Liabilities accrued as of December 31, 1953, unrecorded	65,364.28
Reserve for city allotment projects	215,680.98
Unexpended balance, June 30, 1954	$ 36,222,339.25

Silver Falls in Golden and Silver Falls State Park, Coos County.

REPORT OF STATE PARKS DIVISION

C. H. ARMSTRONG, *State Parks Superintendent*

The biennium has been a period of continuing activity by the State Parks Division in an effort to meet the seemingly ever-increasing demands of the public for recreation in Oregon State Parks. These demands have induced a heavy construction schedule to make available additional new park developments, to insure adequate facilities in existing areas, and increased industry in the planning and acquisition phases to provide for future requirements.

Initial park developments have taken place in ten areas, with one-half of these being provided along the Oregon Coast, from Cape Lookout State Park near Tillamook, to Umpqua Lighthouse State Park, south of Winchester Bay. Other coastal areas developed were Lost Creek Ocean Wayside, Big Creek and Beverly Beach State Parks. Central Oregon received a new park named Tumalo near Bend on the Deschutes River, and Ben Hur Lampman State Park was constructed on the Rogue River in southwestern Oregon. Two Cascade routes of travel were benefited by the development of the North Santiam Forest Wayside on State Route 22, and Jennie B. Harris State Park on the McKenzie Highway. A lease agreement with the U. S. Army Corps of Engineers made available additional properties for park purposes on McNary Lake near Umatilla, and as a result Hat Rock State Park was developed in this northeastern section of the State.

Public reception of overnight camping demanded increased facilities in order to take care of this increasingly popular form of recreation which was first instituted during 1952 in Oregon State Parks. As a result, seven improved camps and two unimproved camps were put into use. Several of the above camps were so well attended that it was necessary to enlarge them for the second season of use; such was the case at Honeyman, Humbug Mountain, Wallowa Lake, and Cape Lookout State Parks. Additional units which will double the capacity of the latter two camps are now under construction with the others to follow.

General day use areas in Oregon State Parks were the recipient of new and improved type facilities to add to the park

visitors' enjoyment of the natural features. Six parks had piped water systems developed. Modern restrooms were constructed at Armitage and Cape Lookout, the latter also receiving electric stove shelters. In order to provide better distribution of cooking facilities in picnic areas, small stove shelters were designed, and subsequently 17 placed in 8 state parks.

As a part of the over-all fire protection plan to safeguard park values throughout the system, over 20 miles of fire suppression roads and fire guards were built. Reclamation of coastal sand dune areas first initiated on the Netarts Spit in 1952 was continued; and, operations were expanded to include 37 acres on the Nehalem Spit with construction of sand fence and the planting of beach grass, this to be followed by scotch broom and shore pines. These operations have been highly successful, resulting in effective sand stabilization which will eventually convert heretofore useless sand wastes into property very desirable for state park purposes.

Portland-Salem Expressway north of Wilsonville

A number of park access roads were constructed and others improved during the biennium. The completion of 1.6 miles of road into Cape Lookout was the largest project. Other road jobs worthy of note are as follows: The building of 1 mile of access road into the new Hat Rock State Park; the oiling and improvement of 3.5 miles of entrance road at Saddle Mountain; the construction of ½ mile of in-park road at Ecola in which clearing and grading operations were completed; initial work on clearing and grading of ½ mile of access road into North Santiam Forest Wayside. Commensurate with the road program was the construction or improvement of nearly 20,000 square yards of parking areas.

Water-associated activities have become increasingly popular with the public, and as a result several Oregon State Parks received facilities which promote this type of recreation. A boat launching area was constructed at Sunset Bay on the southern Oregon Coast, and at Hat Rock a beach improvement project was completed. Improvement of boating facilities at scenic Wallowa Lake took the form of better access at the boat basin and the installation of a boat float.

Expansion of public use facilities was reflected in an increase in administration and utility structures in order to provide additional maintenance services. Modern residences with attached garages were provided for resident park personnel at Harris Beach near Brookings on the Oregon Coast, and at Cape Lookout. In addition, new work sheds were constructed at five state parks.

A number of new park areas were acquired during the biennium throughout the system. Several of the largest and most important from a state park standpoint are as follows: a gift of 63 acres at Blue Lake in Jefferson County to be known as the Elliott R. Corbett II Memorial Park; a lease agreement with the U. S. Army Corps of Engineers for 191 acres for an important addition to Hat Rock State Park in Umatilla County; the purchase of some 79 acres of ocean wayside near Bandon in Coos County; the lease and purchase of approximately 52 acres for an addition to Wallowa Lake State Park in Wallowa County; and, the purchase of a 50.13 acre addition to the Sunset Highway Forest Waysides in Washington County. Other park areas

which have been authorized for acquisition by the Highway Commission, and are in the negotiations stage, are located at Ochoco Reservoir in Crook County, Detroit Reservoir in Marion County, and the Old Fort Stevens area in Clatsop County.

The planning phase in the acquisition and development of state parks has been increasingly emphasized in order to determine present and future needs. Attendance expectations have been estimated by means of graphs for individual parks throughout the park system for a number of years in advance. In making these public utilization forecasts, it was necessary to take into account the local population and traffic volume trends as well as on a state-wide basis. Studies are being carried on to ascertain the present and future needs of each park in order to anticipate the facilities and other improvements required to satisfy public demands. Especial care has been taken in the acquisition of new park areas to see that they not only fit established specifications, but to justify their development in accordance with present and future recreational requirements of the particular portion of the state in which they may be located. To accomplish the latter, it has been necessary on occasion to examine existing state parks within the locality in regards to their future expansion, as well as local population and travel trends.

Overnight camping attendance in Oregon State Parks since the inception of this program in 1952 has shown a steady if not spectacular increase. The following attendance figures reflect this trend by indicating a 50 per cent increase each year over the preceding one.

1952	44,112	Visitor Nights
1953	63,319	" "
1954 (Oct. 1)	100,044	" "

General day use attendance during the biennium is again on the increase after first experiencing a decrease from the previous all-time high attendance year of 1952. Below is listed the attendance for the 1953-1954 period.

1953	4,587,985 persons
1954 (estimate)	5,000,000+ "

REPORT OF TRAVEL INFORMATION DIVISION

CARL W. JORDAN, *Director*

The Travel Information Division continued a comprehensive invitational advertising program during the biennium. This program was aimed at potential Oregon visitors throughout the United States and Canada.

The 1954 campaign was sustained by a fall advertising program, the first one in several years, and results proved very gratifying. Television advertising was used successfully for the first time in 1954, consisting of one minute spots on stations in California.

Television also was used in showing the Division's films on a free loan basis on scores of stations in nearly all the states. Many inquiries were received from viewers who had seen the film and wished additional information. The Division's films were also shown to many civic groups about the country.

The invitational advertising program was sustained by the fine cooperation of various state chambers of commerce, travel organizations, including the Oregon Advertising Club, hotels, motor courts, resorts, newspapers, magazines and radio and television stations. These organizations and facilities have all assisted in promoting the Travel Division's program in inviting potental visitors to Oregon, creating better public relations between the visitors and those who serve them, and helping them select satisfactory accommodations and scenic routes so that their dollars are spent more wisely.

Annual surveys at 16 points of entry show that nearly 2,000,000 cars from out-of-state points visited Oregon during the biennium. The cars carried an average of just over three passengers per car and stayed an average of 6.6 days in the state. Passengers in these cars spent an average of $111.06 during their stay and drove an average of 630 miles on Oregon highways.

A record $250,000,000 is the estimated amount of expenditure of these 6,000,000 visitors during their tours of Oregon. Both 1953 and 1954 surveys showed an estimated annual $125,000,000 visitor income. A conservative estimate, using the total number of miles traveled by visitors during the biennium shows that the

State of Oregon received some $5,000,000 in gas tax alone from the visitor industry, which is still the state's third largest business.

A portion of the improved U. S. 101 through Winchester Bay, Douglas County.

The advertising schedule generally consisted of space in some 27 well-known travel, motor, news and family magazines and over 50 metropolitan newspapers especially aimed at Western readers. Color advertising in newspapers was used very satisfactorily in 1954 and further use is expected during the next biennium.

As a result of advertising, the Division's staff processed over 245,000 inquiries during the biennium, which is a record. An estimated 3 per cent of these inquiries had to be answered by special letter or information. The office also distributed approximately 950,000 pieces of Division and state-published literature and 400,000 pieces of literature for resorts, hotels, motels, highway associations and chambers of commerce.

Division representatives and others representing Oregon attended eleven travel shows in California and the Mid-west during the biennium. Hundreds of thousands of patrons, who paid to attend these shows, were exposed to Oregon literature and information. This activity, along with the sponsored tour of Oregon by prominent travel editors, is part of the program of the Pacific Northwest Travel Association, of which the Travel Information Division is a member. the Travel editors, seven of whom toured Oregon during the biennium, have written many fascinating paragraphs about their experiences here, space which would cost thousands of dollars to purchase if this were necessary.

During the ensuing biennium, the Division looks forward to continuing its invitational program, with increased emphasis on color advertising in both newspapers and magazines and in its major Oregon vacation booklet. It plans to completely revise its major booklet and to publish it in four colors throughout. It will also continue the use of television, especially in the use of its color films for free showings.

An advisory Committee, comprised of community leaders from various sections of the state, establishes the operating policies of the Division, and recommends advertising procedure to the Highway Commission and Engineer. Members of the committee, several of whom have served since the Division was established in 1936, are:

William M. Tugman, Chairman	Eugene
Ralph R. Cronise	Albany
J. W. Forrester, Jr.	Pendleton
Herb Grey	Medford
George M. Henderson	Portland
Frank Jenkins	Klamath Falls
Fred E. Kiddle	Island City
Frank Loggan	Bend
Robert C. Notson	Portland
Arden X. Pangborn	Portland
Arch B. Sanders	Coos Bay
Arthur O. Waud	Tillamook

Columbia River Highway, U. S. 30, in the vicinity of Wygant State Park, Hood River County.

REPORT OF PERSONNEL DIVISION

A. G. HUNTLEY, *Director*

Personnel Management Policy

Whatever the individual position may be in the Department, the end purpose of the work is to facilitate and effect the location, design, construction, and maintenance of State highways and bridges—facilities which serve the recreation and commerce needs of the citizens of Oregon and the nation.

Indirectly but none the less realistically, the file clerk contributes to this end as well as the engineer.

The employee, whose hand gives the human touch to the operations of the Department, brings many expectations to his job with him. It represents his hope for the future in terms of opportunity for personal growth, economic security, advancement, prestige, and his place in the community. In terms of time spent, the job is the major factor in the employee's life.

These facts are recognized, and so far as employment in the Department can provide it, it is the aim of the Personnel Division to see that there is maximum opportunity for the fulfillment of these expectations.

The personnel policy is simple, and it has been found effective; namely, the responsibility and moral obligation of serving employees frankly, fairly, and according to the merit principle in all employment problems and situations, while fulfilling the Department's obligations of loyalty and service to the public.

Administrative Methods

The Personnel Division uses in its operations most of the major, modern, approved personnel practices present in the more efficient governmental agencies and industrial firms. In summary form the program includes: A central personnel division through which all personnel actions of whatever type must channel and be approved; a position classification plan using established specifications for positions based on careful evaluation of duties and responsibilities; a standardized pay plan; recruitment with examination (written and unassembled) conducted by a separate Civil Service Department as a base,

A modern highway greets the motorist on U. S. 101 south of Winchester Bay, Douglas County.

and careful interviewing techniques, and trial-service on the job as a final test; an effective graphic scale efficiency rating system made statistically sound for comparative purposes; a fair and practical system of promotion and transfer; good employment conditions (hours of work, vacations, sick leave, etc.); a disciplinary policy that is consistent and equitable; and a sound retirement plan.

At the beginning of 1954 the Personnel Division completed the modernization of its records system by establishing machine control of all personnel records for 3,000 employees. For six months and annual salary increases this system eliminated the manual preparation of Personnel Actions entirely; thus relieving over 100 field offices of the task of preparing over 2,000 Personnel Action forms annually.

The machine system consists of three phases: (1) an employee roster card which controls salary increases and records

length of service, classification, and a variety of other data; (2) a merit rating card which contains the efficiency rating score, recommendations for promotion, and other related information; and (3) the employee qualification card which contains education, experience, age, physical handicaps, special skills, etc.

Salary and Classification Administration

Frequent studies have been made during the biennium of both engineering and general salary levels in other jurisdictions to enable the Department to keep abreast of changing national and regional salary structures. Most notable of these studies was a nation-wide survey of engineering salaries and working conditions in other Highway Departments and public agencies using engineers. A report of this survey, analyzed and presented in a progressive distribution form, was used for presentation to the Civil Service Commission and Legislative Assembly. Approval was granted of one to two step salary range increases effective July 1, 1953.

In December of 1952, the Personnel Division initiated a classification review of all stenographic positions in the Department believing that many of these positions were classified too low in relation to the type and responsibilities involved. As a result of this complete review, the Civil Service Department made a number of classification changes resulting in a more equitable relationship.

Selection and Placement

At the beginning of the biennium there were 890 professional and sub-professional engineering employees. In July of 1954 the total stood at 906—a very slight increase in total numbers over a two-year period. Primarily as a result of normal turnover 684 engineering placements, mostly in the lower grades, were made through the Personnel Division during this period. The average turnover for the period was 3.28 per cent per month, also most of it in the lower grades.

In 1952, 26 new graduate civil engineers were employed through the Personnel Division; 30 in 1953; and 14 up to the end of the biennium in 1954. These young men have come from accredited engineering schools in various parts of the United States.

During the biennium, 272 clerical placements have been made, 1,661 maintenance, and 87 miscellaneous, which includes such categories as accountant, weighmaster, right of way agent, and park custodian.

The average monthly turnover rate for all employees for the biennium was 3.59 per cent.

Employee Relations and Welfare

On April 1, 1953, as a result of legislative action, all Highway employees were covered by Federal Social Security retroactive to January 1, 1951. At the same time the State Retirement System was reduced to 60 per cent of original benefits.

The combined Social Security-State Retirement coverage gives employees a better plan than was previously had with a more comprehensive retirement system alone.

The average employee with some prior service can expect when reaching the age of 65 to have a combined pension of around $200, which is increased to nearly $250 when his wife reaches age 65.

Also, during this period improvements have been made in the Highway Department group insurance and weekly benefits plan, with approximately 20 per cent increased benefits at the same previous premium. This was possible because of increased membership and a favorable experience rating.

Also, a new $10-deductible medical, hospital, and surgical plan was installed during this period for the benefit of employees

Employee Efficiency

The 3,000 employees of the Department are rated annually as to their efficiency on the job. Because of a large volume of supervisory criticism and dissatisfaction with the old system, a new merit rating form was developed in 1953.

The rating is of the graphic scale type which makes for simplicity and ease of rating. The average rater finds a linear basis of quantity an easier method of expressing his opinion. The system leaves the rater free to have a fine numerical graduation, but at the same time he is not deprived of the

descriptive phrases which help him to make his judgment concrete. There are two basic forms: the rating for supervisory positions, and the regular employee rating.

The efficiency rating is used to determine eligibility for salary increases; and as part of the score in promotional examinations; and for employee development interviews.

All new employees are rated on a special form at the end of three months service to determine if they are to be retained as regular employees. Candidates failing to meet the proper standards by trial on the job are terminated.

Employee Training

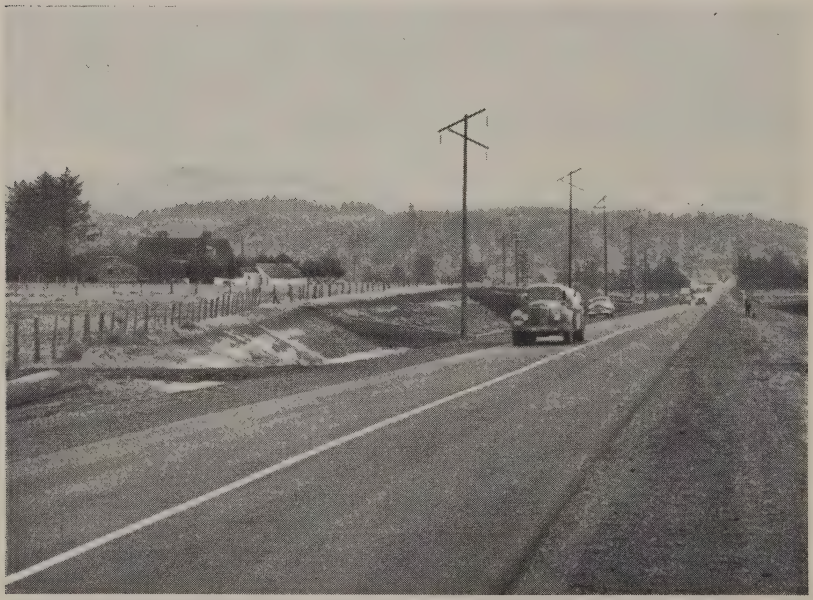
Most training in the Department has been confined to engineering personnel. The training for graduate civil engineers has not been formal, but all supervisory engineers are instructed to conduct on-the-job training for these men. This coupled with a free system of transfer between divisions, does offer the graduate a good opportunity for training in the various branches of highway engineering.

The Department's training policy does not establish any definite cleavage, as some departments and agencies do, that restrains a sub-professional engineer from entering the professional grades. It is believed that the inherent abilities and characteristics of the man himself are most important; that these abilities are only enhanced and sharpened by education; and that education itself is not a valid criterion for determining the ability to handle more responsible positions. An individual in the Highway Department with the proper personal characteristics who will make the effort to educate himself has an excellent opportunity for advancement, and over a period of time may reach engineering positions of high level. This is particularly true if through his own efforts he eventually passes the examination for professional registration which many of the Department's trained engineers do.

Also academic training is offered graduate engineers and other engineering employees at frequent intervals. A course "Principles of Plane Surveying" which includes both class and field problems has been conducted for four consecutive years. A course "Review of Civil Engineering" has been taught for

the third time using professors from the School of Engineering at Oregon State College. "Review of Civil Engineering" is designed to follow the pattern of the registration examination. A course in "Curves and Earthwork" was arranged for and taught by the Division Office in Roseburg. A course "Fundamentals of Electricity" was arranged by the Personnel Division and taught by Mr. Lawrence E. George, Signal Engineer for the Traffic Engineering Division. A course in "Soil Mechanics" is in the coming training program.

Though it is not formalized in a strict sense, it is believed that the Department's "study-work" program for engineering students to be the largest and most successful training program. Leave without pay for employees on engineering crews is reserved for engineering students for summer employment. Between 20 and 25 engineering students were employed during each summer of 1952 and 1953. This work experience supplements the academic training these men are receiving, and when they graduate, they have a good start in the highway engineering profession.



New location of U. S. 101 between Bay City and Tillamook.

REPORT OF PERMIT DIVISION

R. B. SIPPRELL, *Director of Permits*

Operations of the Permit Division are divided into three separate sections—Utility Permits, Transportation Permits and Weighmasters. The functions and duties performed by each section are described separately.

Utility Permits

This section issues all permits, or franchises, to public or private utilities, cooperatives, agencies of the Federal government, firms or individuals for the construction and maintenance of pole lines or pipe lines along or across state highway rights of way and over state park property. An average of approximately 450 such permits are issued annually. In addition to pole line and pipe line permits, this office has issued an average of 1,150 permits annually during the past 5 years, as required by law, for the construction of approach roads to non-access controlled highways.

A number of miscellaneous permits are also issued each year covering such items as removal of a cutbank or construction of a dike on the highway right of way by an individual for his own benefit, operation of log loading or hauling equipment on beaches of the Pacific Ocean which are under the jurisdiction of the Highway Commission, construction of stairways on the right of way, etc. Field investigations for all permits issued by the Utility Permit Section are handled by Division Engineers and District Superintendents of the Maintenance Division.

Transportation Permits

This section issues permits for the movement of vehicles, or the transportation by motor truck, of loads having a size or weight in excess of that allowed by the basic statutory limitations; namely, 8 feet in width, 12½ feet in height, 35 feet in length for a single vehicle, 50 feet in length for a combination of vehicles, and 60,000 pounds combined gross weight.

By direction of the legislature, the Highway Commission in October, 1953, adopted a resolution which had the effect of increasing the legal limits of length and weight on certain

highways for the more commonly used types of truck-trailer combinations, such as those used in the transportation of general freight, lumber, bulk petroleum, produce, etc. This action eliminated the continuous operation permits formerly issued biennially covering the operation of some 7,000 vehicles. Information as to types, sizes and weights of vehicle combinations and highways over which they are authorized to operate without permit is made available to the industry by means of a color coded map.

Modernized section of U. S. 97 through Gilchrist, Klamath County.

Under authority of legislation passed in 1953, permits for the continuous operation of vehicles having a height of 13 feet 6 inches are issued to some types of truck-trailer equipment, excluding principally trucks that are engaged in hauling logs, lumber or baled hay. Continuous operation permits are also issued allowing operation of 40-foot semitrailers over a few

selected interstate routes, and, on a greater mileage of highways, of cars or pickups pulling overlength trailer coaches.

One of the major tasks of the Transportation Permit Section consists of issuing annual permits for the operation of overlength and overweight log and piling trucks. These permits are issued for lengths of loads varying up to a maximum of 80 feet overall length for log trucks and 140 feet overall length for piling, with the maximum length based upon the geometric design of the particular section of highway involved. A comprehensive record is kept of hundreds of test runs which have been made during the past several years to determine the maximum safe length of loads that may be permitted over each section of any highway over which logs and piling are hauled. In 1953, over 7,100 such permits were issued to approximately 2,450 owners covering the operation of 3,820 log and piling trucks.

By far the largest single phase of this section's activities is the issuance of special single trip permits for overdimensional or overweight loads of a nature that cannot be readily reduced or dismantled to legal size or weight. Many items of machinery and equipment used by the construction and logging industries, tanks, transformers, large pipes, ship propellers, rotors and generator parts for hydro-electric plants, are examples of items that are frequently hauled on truck-tractor and semitrailer combinations that are especially designed for this work.

In 1953, there were slightly less than 22,000 special single trip permits issued to 564 haulers qualified to receive such permits as a result of meeting the bond and insurance requirements of the Highway Commission. This was double the number of such permits issued in 1949, indicating the tremendous growth of this phase of the truck transportation industry. The limited movement of houses and buildings over state highways is allowed under this same type of permit, with additional restrictions and provisions, and in 1953, 559 permits were issued for oversize building moves.

About half of these special single trip transportation permits are issued through the three division offices and fourteen district maintenance offices located throughout the state, excluding Portland and Salem. Permit offices are located also

at Medford and Ontario, where the services of part-time permit clerks are utilized, and at Newport through the cooperation of the local resident construction engineer's office.

Weighmasters

Operation of the Weighmaster Section constitutes the major expenditure of time and money in the Permit Division. An average of 65 weighmasters are employed throughout the state under the supervision of a Chief Weighmaster and two assistant Chief Weighmasters. Ten clerks and typists are employed in the headquarters office at Salem in the processing of records.

The sixty-five field weighmasters, which include eight area working supervisors, operate fixed platform scales at 56 locations and in addition use 21 sets of loadometers or portable scales in weighing trucks for the purpose of obtaining compliance with the size and weight laws or the provisions of

New route of Columbia River Highway, U. S. 30, east of Mosier, Wasco County.

transportation permits. Fifty-three cars, pickups and panel trucks are used, 19 of them being equipped with 2-way radios to provide a means of rapid communications between weighmasters and with the State Police.

A record of each individual weighing is made on punch cards and through the use of I. B. M. equipment of the Traffic Engineering Division, comprehensive monthly and annual reports are prepared for the use and information of the Legislature, the Highway Department, other state agencies, and bonafide industry associations who are conscious of the damaging effects of overloading. These data have been invaluable to legislative and interim committees concerned with the size and weight laws, in providing factual information based on an average of approximately 350,000 weighings annually during the past five years.

Because legislatures have seen fit to give consideration to special problems in the log hauling industry and have granted concessions in weight to such trucks over the weights allowed for trucks hauling other commodities, it has been necessary to keep separate records for each. A summary of principal statistics obtained from the annual reports for the years 1949 to 1953 inclusive, is shown below. Records for the first 7 months of 1951 were summarized separately from the last 5 months, because of the effect of changes made by the Legislature in the 1951 law which became effective August 2 of that year, and included much more severe penalties for overloading than previous laws.

	1949	1950	(First 7 mos.) 1951	(Last 5 mos.) 1951	1952	1953
Logs, Poles, Piling						
Loads weighed	149,596	183,757	146,972	85,168	225,475	219,146
No. of weight violations	8,531	10,853	5,672	1,599	3,529	3,252
Per cent of violations	5.70	5.90	3.86	1.88	1.57	1.48
No. of operators	3,091	3,401	3,369	3,116	4,630	4,555
No. of trucks	4,757	5,252	5,321	5,106	6,405	7,293
Fines and costs (total)	$232,716	$247,825	$142,542	$142,962	$316,966	$252,548
Fines and costs (average)	$ 28.60	$ 23.95	$ 25.95	$ 103.75	$ 98.50	$ 85.26
Other Commodities						
Loads weighed	50,669	85,661	91,598	73,333	178,129	245,825
No. of weight violations	2,614	3,913	2,672	1,374	2,455	2,945
Per cent of violations	5.16	4.57	2.92	1.87	1.36	1.20
No. of operators	3,665	5,405	4,521	4,268	7,206	9,178
Fines and costs (total)	$ 71,571	$ 95,568	$ 60,298	$ 72,731	$132,517	$146,439
Fines and costs (average)	$ 29.16	$ 26.41	$ 23.50	$ 55.77	$ 59.83	$ 53.41

Section Three

Financial Statements

Covering the Fiscal Period

July 1, 1952, to June 30, 1954

AND

STATISTICAL INFORMATION

PERTAINING TO

State Highways and County Roads

IN THE

STATE OF OREGON

Contrasting old U. S. 30 and new Columbia River Highway westerly from Mosier. (Western Ways Photo.)

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Table No. 1

DETAILED SUMMARY OF INCOME AND EXPENDITURES
July 1, 1952 to June 30, 1954

INCOME

Classification	Receipts July 1, 1952 to June 30, 1953	Receipts July 1, 1953 to June 30, 1954	Total Receipts July 1, 1952 to June 30, 1954
State Funds:			
Bond Sales (including accrued interest)	$ 9,873,046.53	$31,565,162.22	$ 41,438,208.75
Motor vehicle license fees	9,557,574.94	9,832,027.21	19,389,602.15
Gasoline tax	30,277,639.04	30,425,251.25	60,702,890.29
Diesel fuel tax	46,993.25	43,666.12	90,659.37
Motor transportation fees	8,138,316.45	9,384,497.24	17,522,813.69
Traffic fines	383,709.84	389,926.63	773,636.47
Cash discounts	32,908.42	30,478.59	63,387.01
Contributions to cities withheld	250,000.00	250,000.00	500,000.00
Interest on loan of bond funds	301,047.11	423,555.21	724,602.32
Receipts from counties to apply on loans	.....	20,000.00	20,000.00
Refund of unexpended balance of state police contributions	.....	.....	.....
Subtotals, state funds	$58,861,235.58	$82,364,564.47	$141,225,800.05
Less Contributions:			
To state police	$1,149,167.00	$ 1,563,980.00	$ 2,713,147.00
To counties	9,172,836.56	9,343,537.52	18,516,374.08
To cities	4,698,767.00	5,000,596.08	9,699,363.08
Loan to counties	20,000.00	.....	20,000.00
Subtotal, contributions	$15,040,770.56	$15,908,113.60	$ 30,948,884.16
Total net income, state funds	$43,820,465.02	$66,456,450.87	$110,276,915.89
Cooperative Funds:			
City cooperative funds	$ 5,059.40	$ 12,097.51	$ 17,156.91
County cooperative funds	406,677.16	79,722.70	486,399.86
County payments on federal aid projects	208,250.00	312,297.34	520,547.34
Federal cooperative funds	8,976,221.36	9,756,444.46	18,732,665.82
Miscellaneous cooperative funds	402,430.44	177,876.32	580,306.76
Subtotals, cooperative funds	$ 9,998,638.36	$10,338,438.33	$ 20,337,076.69
Grand totals, net income	$53,819,103.38	$76,794,889.20	$130,613,992.58

Table No. 1—Continued

EXPENDITURES

Classification	Expenditures July 1, 1952 to June 30, 1953	Expenditures July 1, 1953 to June 30, 1954	Total Expenditures July 1, 1952 to June 30, 1954
Capital Outlays:			
Construction, primary highways	$27,350,431.72	$28,968,666.05	$ 56,319,097.77
Construction, secondary highways	3,277,166.10	2,423,244.61	5,700,410.71
Construction, county roads	1,429,574.06	2,435,040.09	3,864,614.15
Cooperation in forest road work	1,564.20	19,682.16	21,246.36
City allotment projects	286,865.84	270,728.06	557,593.90
Minor betterments	729,347.37	796,861.30	1,526,208.67
Surveys	1,263,521.45	1,385,480.42	2,649,001.87
Real property negotiation expense	146,231.19	159,162.34	305,393.53
Purchase of rights of way, quarries, etc.	5,401,239.94	5,690,659.69	11,091,899.63
Purchase of parks	44,714.74	Cr. 27,663.02	17,051.72
Improvements in parks	501,594.49	533,513.64	1,035,108.13
Improvements at maintenance stations	283,282.32	235,889.08	519,171.40
Improvements of other properties	280,939.52	508,662.22	789,601.74
Equipment purchases less credits for sales and depreciation	429,889.96	68,418.13	498,308.09
Subtotals, capital outlays	$41,426,362.90	$43,468,344.77	$ 84,894,707.67
Maintenance:			
Special Maintenance	$ 376,062.60	$ 359,815.08	$ 735,877.68
General maintenance, primary	7,907,221.03	7,840,935.66	15,748,156.69
General maintenance, secondary	2,555,714.42	2,734,796.12	5,290,510.54
County road signs, etc.	24,894.60	37,665.81	62,560.41
District maintenance superintendence	142,981.36	.....	142,981.36
Subtotals, maintenance	$11,006,874.01	$10,973,212.67	$ 21,980,086.68
Operation:			
Administration and general supervision	$ 1,950,801.58	$ 2,312,506.90	$ 4,263,308.48
Planning and traffic surveys	315,277.42	408,781.06	724,058.48
Travel information bureau	296,356.20	263,396.93	559,753.13
Operation of parks	367,301.51	354,493.84	721,795.35
Rights of way leases, etc.	Cr. 36,677.31	Cr. 70,041.66	Cr. 106,718.97
Mintenance station upkeep	109,689.43	120,937.49	230,626.92
Radio communication system	48,515.52	50,343.28	98,858.80
Truck load inspection	352,531.53	383,528.15	736,059.68
Operation of drawbridges and ferries	209,782.16	246,704.93	456,487.09
Research and special investigation	28,076.01	35,682.41	63,758.42
Contribution to retirement fund	493,449.93	427,455.47	920,905.40
Contribution to social security	29,709.73	211,173.75	240,883.48
Legislative interim committee expense	2,565.30	16,152.32	18,717.62
Miscellaneous general expense	217,783.33	140,294.65	358,077.98
Subtotals, operation	$ 4,385,162.34	$ 4,901,409.52	$ 9,286,571.86
Service and clearing accounts	600,734.62	302,145.24	902,879.86
Bond interest and maturities	2,252,534.02	3,243,364.47	5,495,898.49
Total expenditures	$59,671,667.89	$62,888,476.67	$122,560,144.56

Table No. 2

SUMMARY OF EXPENDITURES JULY 1, 1952 TO JUNE 30, 1953

Classification of Expenditures	Total Expended	Expenditures by Funds			
		State	County	Federal	Miscellaneous
Construction, primary highways	$27,350,431.72	$21,187,184.01	$	$5,818,341.36	$344,906.35
Construction, secondary highways	3,277,166.10	1,320,165.36		1,953,690.00	3,310.74
Construction, county roads	1,429,574.06	Cr. 310,686.09	614,927.16	1,091,729.00	33,603.99
Cooperation in forest road work	1,564.20	1,564.20			
City allotment projects	286,865.84	281,806.44			5,059.40
Minor betterments	729,347.37	709,588.01			19,759.36
Surveys	1,263,521.45	1,262,671.45			850.00
Real property negotiation expense	146,231.19	146,231.19			
Purchase of rights of way, quarries, etc.	5,401,239.94	5,401,239.94			
Purchase of parks	44,714.74	44,714.74			
Improvements in parks	501,594.49	501,594.49			
Improvements at maintenance stations	283,282.32	283,282.32			
Improvements of other properties	280,939.52	280,939.52			
Equipment purchases less sales and depreciation	429,889.96	429,889.96			
Subtotals, capital outlays	$41,426,362.90	$31,540,185.54	$614,927.16	$8,863,760.36	$407,489.84
Special maintenance	$ 376,062.60	$ 376,062.60	$	$	$
General maintenance, primary	7,907,221.03	7,907,221.03			
General maintenance, secondary	2,555,714.42	2,555,714.42			
County road signs, etc.	24,894.60	24,894.60			
District maintenance superintendence	142,981.36	142,981.36			
Subtotals, maintenance	$11,006,874.01	$11,006,874.01	$	$	$
Administration and general supervision	$ 1,950,801.58	$ 1,950,801.58	$	$	$
Planning and traffic surveys	315,277.42	202,816.42		112,461.00	
Travel information bureau	296,356.20	296,356.20			
Operation of parks	367,301.51	367,301.51			
Rights of way leases, etc.	Cr. 36,677.31	Cr. 36,677.31			
Maintenance station and truck scale upkeep	109,689.43	109,689.43			
Radio communication system	48,515.52	48,515.52			
Truck load inspection	352,531.53	352,531.53			
Operation of drawbridges and ferries	209,782.16	209,782.16			
Research and special investigation	28,076.01	28,076.01			
Contribution to retirement fund	493,449.93	493,449.93			
Contribution to social security	29,709.73	29,709.73			
Legislative interim committee expense	2,565.30	2,565.30			
Miscellaneous general expense	217,783.33	217,783.33			
Subtotals, operation	$ 4,385,162.34	$ 4,272,701.34	$	$ 112,461.00	$
Service and clearing accounts	600,734.62	600,734.62			
Bond interest and maturities	2,252,534.02	2,252,534.02			
Totals	$59,671,667.89	$49,673,029.53	$614,927.16	$8,976,221.36	$407,489.84

Table No. 2—Continued

SUMMARY OF EXPENDITURES JULY 1, 1953 TO JUNE 30, 1954

Classification of expenditures	Total Expended	Expenditures by Funds			
		State	County	Federal	Miscellaneous
Construction, primary highways	$28,968,666.05	$24,257,943.15	$	$4,670,229.46	$ 40,493.44
Construction, secondary highways	2,423,244.61	990,926.61		1,432,318.00	
Construction, county roads	2,435,040.09	523,593.05	392,020.04	1,502,927.00	16,500.00
Cooperation in forest road work	19,682.16	19,682.16			
City allotment projects	270,728.06	258,630.55			12,097.51
Minor betterments	796,861.30	796,861.30			
Surveys	1,385,480.42	1,376,587.92			8,892.50
Real property negotiation expense	159,162.34	159,162.34			
Purchase of rights of way, quarries, etc.	5,690,659.69	5,690,659.69			
Purchase of parks	Cr. 27,663.02	Cr. 27,663.02			
Improvements in parks	533,513.64	533,513.64			
Improvements at maintenance stations	235,889.08	235,889.08			
Improvements of other properties	508,662.22	508,662.22			
Equipment purchases less sales and depreciation	68,418.13	68,418.13			
Subtotals, capital outlays	$43,468,344.77	$35,392,866.82	$392,020.04	$7,605,474.46	$ 77,983.45
Special maintenance	359,815.08	359,815.08			
General maintenance, primary	7,840,935.66	7,840,935.66			
General maintenance, secondary	2,734,796.12	2,734,796.12			
County road signs, etc.	37,665.81	37,665.81			
Subtotals, maintenance	$10,973,212.67	$10,973,212.67	$	$	$
Administration and general supervision	$ 2,312,506.90	$ 2,312,506.90	$	$	$
Planning and traffic surveys	408,781.06	297,446.06		111,335.00	
Travel information bureau	263,396.93	263,396.93			
Operation of parks	354,493.84	354,493.84			
Rights of way leases, etc.	Cr. 70,041.66	Cr. 70,041.66			
Maintenance station and truck scale upkeep	120,937.49	120,937.49			
Radio communication system	50,343.28	50,343.28			
Truck load inspection	383,528.15	383,528.15			
Operation of drawbridges and ferries	246,704.93	246,704.93			
Research and special investigation	35,682.41	35,682.41			
Contribution to retirement fund	427,455.47	427,455.47			
Contribution to social security	211,173.75	211,173.75			
Legislative interim committee expense	16,152.32	16,152.32			
Miscellaneous general expense	140,294.65	140,294.65			
Subtotals, operation	$ 4,901,409.52	$ 4,790,074.52	$	$ 111,335.00	$
Service and clearing accounts	302,145.24	302,145.24			
Bond interest and maturities	3,243,364.47	1,333,097.47		1,910,267.00	
Totals	$62,888,476.67	$52,791,396.72	$392,020.04	$9,627,076.46	$ 77,983.45

Table No. 3

MILEAGES OF HIGHWAY CONSTRUCTION WORK PERFORMED by the STATE HIGHWAY COMMISSION

Highway System and Year	Concrete Pavement (Miles)	Bituminous Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surfacing (Miles)	Rock and Gravel Surfacing (Miles)	Grading (Miles)	Bridges over 20 feet (No.)	Grade Separations (No.)
Primary:								
1917-1950	371.0	851.5	1,209.7	3,306.1	4,967.9	4,405.5	1,180	85
1951	1.0	129.6	25.0	23.0	145.4	115.4	20	3
1952	.....	117.1	3.0	4.6	123.0	78.6	10	9
1953	.....	161.7	0.3	141.1	154.1	169.4	37	44
1954	.....	182.6	.....	72.9	154.7	214.8	32	41
Totals	372.0	1,442.5	1,238.0	3,547.7	5,545.1	4,983.7	1,279	182
Secondary:								
1933-1950	8.7	52.2	59.4	1,106.7	1,076.0	703.7	118	14
1951	.....	25.1	0.3	41.7	90.6	58.8	4	.....
1952	.....	34.0	.....	44.5	77.5	69.6	10	.....
1953	.....	17.0	.....	46.0	65.3	39.4	7	1
1954	.....	72.4	.....	23.6	72.8	53.5	6	.....
Totals	8.7	200.7	59.7	1,262.5	1,382.2	925.0	145	15
Other Roads:								
1935-1950	7.3	52.7	39.4	330.3	364.3	248.1	34	7
1951	.....	17.5	1.2	10.7	44.1	24.4	6	.....
1952	.....	13.6	0.8	16.4	38.3	23.1	13	.....
1953	.....	21.9	0.3	82.5	86.5	47.5	8	.....
1954	.....	14.5	.....	73.9	56.4	49.1	3	.....
Totals	7.3	120.2	41.7	513.8	589.6	392.2	64	7

Table No. 4

MILEAGES OF STATE HIGHWAYS MAINTAINED by the STATE HIGHWAY COMMISSION

Highway System and Year	Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Rock Surfacing	Unoiled Rock Surfacing	Graded and Unimproved Earth	Total
Primary:							
1949	345	561	1,272	2,411	177	56	4,822
1950	336	584	1,294	2,396	149	57	4,816
1951	326	708	1,236	2,369	125	42	4,806
1952	310	816	1,275	2,280	121	8	4,810
1953	296	984	1,249	2,206	94	8	4,837
Secondary:							
1949	50	180	45	1,424	573	178	2,450
1950	50	210	69	1,453	564	130	2,476
1951	45	223	85	1,488	510	122	2,473
1952	45	267	94	1,487	479	148	2,520
1953	44	330	71	1,521	436	113	2,515

Table No. 5

STATE FUNDS RECEIVED AND EXPENDED BY THE STATE HIGHWAY COMMISSION

From 1917 to June 30, 1954

Year	Net Receipts (State Funds Only)	Net Expenditures (State Funds Only)
1917 (including $94,418.14 balance from 1916)	$ 1,802,190.22	$ 674,249.61
1918	1,759,600.15	2,214,007.87
1919	7,458,614.05	6,278,304.16
1920	11,320,354.05	11,381,606.97
1921	13,550,136.40	15,045,824.65
1922	9,608,966.45	7,724,688.96
1923	7,664,977.79	7,287,991.77
1924	6,115,536.48	6,916,867.91
1925	10,231,908.30	10,611,283.45
1926	7,345,080.19	7,927,130.75
1927	8,627,279.00	8,474,609.91
1928	8,721,396.09	8,975,204.79
1929	10,658,473.58	10,160,542.57
1930	13,897,663.65	12,808,014.45
1931	10,930,545.38	11,108,835.57
1932	9,925,665.72	10,812,369.81
1933	7,804,925.99	7,860,497.50
1934	8,798,396.81	7,517,063.41
1935	14,469,922.86	13,687,022.82
1936	10,943,742.46	13,194,698.50
1937	11,921,069.07	12,595,127.42
1938	11,418,916.44	11,261,453.70
1939	11,771,364.62	11,158,189.25
1940	12,759,332.27	12,156,575.57
1941	15,093,637.57	14,874,800.01
1942	13,450,738.45	13,290,781.61
1943	11,738,155.10	9,128,388.61
1944	11,714,984.39	8,499,431.13
1945	13,224,169.64	7,635,689.97
1946	18,681,153.29	15,336,831.64
1947	19,783,754.69	19,282,928.54
1948	20,170,681.21	25,057,168.91
1949	19,231,769.16	27,317,223.60
1950	31,367,429.18	28,443,846.33
1951	45,988,972.78	33,413,778.37
1952	47,899,533.72	49,479,889.01
1953	76,564,299.65	50,429,167.98
1954 (To June 30)	14,962,543.15	23,133,453.67
Totals	$589,377,880.00	$553,155,540.75
Balance on hand, July 1, 1954		36,222,339.25
Totals		$589,377,880.00

Table No. 6

YEARLY EXPENDITURES ON WORK HANDLED UNDER THE SUPERVISION OF THE STATE HIGHWAY COMMISSION

From 1917 to June 30, 1954

Year	Funds State	County Funds	Government Funds	Miscellaneous Funds	Totals
1917-1918	$ 2,888,257.48	$ 709,724.79	$	$	$ 3,597,982.27
1919-1920	17,659,911.13	1,235,386.96	1,320,878.93	19,364.26	20,235,541.28
1921-1922	22,770,513.61	4,711,685.07	3,225,651.72	168,268.13	30,876,118.53
1923-1924	14,204,859.68	3,724,533.62	2,837,866.24	285,226.61	21,052,486.15
1925-1926	18,538,414.20	2,001,962.21	2,592,017.66	182,399.75	23,314,793.82
1927	8,474,609.91	611,924.23	1,111,521.64	65,387.07	10,263,442.85
1928	8,975,204.79	683,283.51	582,440.20	27,315.83	10,268,244.33
1929	10,160,542.57	532,907.15	624,415.28	9,969.29	11,327,834.29
1930	12,808,014.45	280,079.24	1,565,288.34	14,554.57	14,667,936.60
1931	11,108,835.57	236,863.93	4,535,069.46	19,947.46	15,900,716.42
1932	10,812,369.81	165,238.34	1,703,369.15	63,513.25	12,744,490.55
1933	7,860,497.50	168,028.79	2,723,724.39	26,912.05	10,779,162.73
1934	7,517,063.41	174,720.24	6,023,993.01	3,522.50	13,719,299.16
1935	13,687,022.82	133,562.57	4,165,503.33	10,000.00	17,996,088.72
1936	13,194,698.50	129,233.41	6,375,343.26	8,773.61	19,708,048.78
1937	12,595,127.42	80,174.48	4,589,894.89	62,146.90	17,327,343.69
1938	11,261,453.70	186,284.48	2,873,801.64	25,000.00	14,346,539.82
1939	11,158,189.25	9,480.34	2,652,475.77	12,202.46	13,832,347.82
1940	12,156,575.57	4,000.00	2,926,250.31	30,976.06	15,117,801.94
1941	14,874,800.01	62,041.05	2,810,894.93	7,250.00	17,754,985.99
1942	13,290,781.61	8,492.08	2,273,616.82	13,926.38	15,586,816.89
1943	9,128,388.61	1,550.00	4,341,584.26	32,500.00	13,504,022.87
1944	8,499,431.13	8,550.00	3,108,858.22	30,112.71	11,646,952.06
1945	7,635,689.97	1,530.00	2,290,000.27	861.01	9,928,101.25
1946	15,336,831.64	1,550.00	2,339,091.54	385.08	17,677,858.26
1947	19,282,928.54	16,200.00	6,771,812.00	22,421.33	26,093,361.87
1948	25,057,168.91	19,722.70	6,180,173.46	31,318.34	31,288,383.41
1949	27,317,223.60	269,590.62	6,555,119.04	71,522.66	34,213,455.92
1950	28,443,846.33	150,124.60	6,586,420.35	214,307.28	35,394,698.56
1951	33,413,778.37	256,393.83	7,327,746.25	553,510.52	41,551,428.97
1952	49,479,889.01	382,570.69	7,334,398.41	357,570.45	57,554,428.56
1953	50,429,167.98	482,206.33	8,859,076.91	236,740.71	60,007,191.93
1954 (To June 30)	23,133,453.67	175,247.34	3,472,673.50	72,984.23	26,854,358.74
Totals	$553,155,540.75	$ 17,614,862.60	$122,680,971.18	$ 2,680,890.50	$696,132,265.03

Table No. 7

SUMMARY OF EXPENDITURES BY MAJOR ITEMS

From 1917 to June 30, 1954

Classification of Expenditures	Total Expended	Expenditures by Funds			
		State	County	Federal	Miscellaneous
Capital Outlays:					
Contract construction	$330,538,180.77	$192,650,487.31	$ 16,984,493.80	$118,444,799.47	$ 2,458,400.19
Cooperation in forest road work	8,112,419.64	7,618,069.27	494,350.37	.....	.....
Minor betterments	12,612,381.54	12,530,870.56	5,272.74	4,000.00	72,238.24
Surveys	11,773,107.21	11,447,842.70	15,672.21	299,849.80	9,742.50
Subtotals, construction	$363,036,089.16	$224,247,269.84	$ 17,499,789.12	$118,748,649.27	$ 2,540,380.93
Rights of way, quarries, etc.	$ 32,047,313.80	$ 31,826,151.26	$ 9,909.75	$ 211,252.79	$ .....
Parks	3,521,969.95	3,506,990.95	.....	14,979.00	.....
Buildings and improvements (except parks)	5,690,039.20	5,657,579.60	.....	32,459.60	.....
Equipment (subsequent to 1934 only)	4,438,070.15	4,438,070.15	.....	.....	.....
Subtotals, capital outlays (including construction)	$408,733,482.26	$269,676,061.80	$ 17,509,698.87	$119,007,340.66	$ 2,540,380.93
Maintenance:					
Special maintenance	$ 13,842,428.60	$ 13,469,229.66	$ 2,516.17	$ 343,945.45	$ 26,737.32
General maintenance	133,365,988.45	133,228,885.95	83,320.64	51,999.99	1,781.87
Other maintenance items	5,071,636.23	5,063,370.67	2,527.41	5,738.15	.....
Subtotals, maintenance	$152,280,053.28	$151,761,486.28	$ 88,364.22	$ 401,683.59	$ 28,519.19
Miscellaneous:					
Administration and general supervision	$ 19,181,644.25	$ 19,181,644.25	$	$	$ .....
Miscellaneous operation	26,232,654.79	24,983,543.35	16,799.51	1,232,311.93	.....
Bond interest and maturities	89,704,430.45	87,794,163.45	.....	1,910,267.00	.....
Subtotals, miscellaneous	$135,118,729.49	$131,959,351.05	$ 16,799.51	$ 3,142,578.93	$ .....
Totals	$696,132,265.03	$553,396,899.13	$ 17,614,862.60	$122,551,603.18	$ 2,568,900.12

For a summary of expenditures in detail see Table No. 8.

Table No. 8—SUMMARY OF EXPENDITURES FROM 1917 TO JUNE 30, 1954

Classification of Expenditures	Total Expended	Expenditures by Funds			
		State	County	Federal	Miscellaneous
Construction, primary highways (includes flight strips)	$274,184,067.24	$164,761,031.36	$ 14,287,614.28	$ 93,502,741.62	$ 1,632,679.98
Construction, secondary highways	35,325,262.14	18,544,745.20	536,430.52	16,187,246.17	56,840.25
Construction, county roads	19,309,134.61	7,859,156.74	2,160,449.00	8,754,811.68	534,717.19
Cooperation in forest road work	8,112,419.64	7,618,069.27	494,350.37		
City allotment projects	1,671,647.70	1,437,484.93			234,162.77
Minor betterments	12,612,381.54	12,530,870.56	5,272.74	4,000.00	9,742.50
Surveys and engineering county work	11,926,806.01	11,603,541.50	15,672.21	299,849.80	9,742.50
Real property negotiation expense	1,387,260.72	1,387,260.72			
Purchase of rights of way, quarries, etc.	30,660,053.08	30,438,890.54	9,909.75	211,252.79	
Purchase of parks	1,108,869.48	1,108,869.48			
Improvements in parks	2,305,470.75	2,290,491.75		14,979.00	
Improvements at maintenance stations, etc.	5,690,039.20	5,657,579.60		32,459.60	
Equipment purchases less sales and depreciation	4,438,070.15	4,438,070.15			
Subtotals, capital outlays	$408,733,482.26	$269,676,061.80	$ 17,509,698.87	$119,007,340.66	$ 2,540,380.93
Special maintenance	$ 13,842,428.60	$ 13,469,229.66	$ 2,516.17	$ 343,945.45	$ 26,737.32
General maintenance, primary	104,657,852.56	104,526,104.91	81,368.96	48,596.82	1,781.87
General maintenance, secondary	28,697,204.05	28,691,849.20	1,951.68	3,403.17	
County road signs, etc.	913,578.57	908,738.14	2,527.41	2,313.02	
Maintenance of city streets	366,868.64	363,443.51		3,425.13	
District maintenance superintendence	3,802,120.86	3,802,120.86			
Subtotals, maintenance	$152,280,053.28	$151,761,486.28	$ 88,364.22	$ 401,683.59	$ 28,519.19
Administration and general supervision	$ 19,181,644.25	$ 19,181,644.25	$	$	$
Planning and traffic surveys	3,407,977.90	2,200,937.97		1,207,039.93	
Travel information bureau	2,820,669.12	2,820,669.12			
Operation of parks	2,467,685.51	2,467,685.51			
Operation of drawbridges and ferries	2,931,108.48	2,914,308.97	16,799.51		
Maintenance station and truck scale upkeep	1,062,935.59	1,062,935.59			
Radio communication system	409,487.03	384,215.03		25,272.00	
Truck load inspection	2,315,133.21	2,315,133.21			
Contributions to retirement funds	3,564,145.67	3,564,145.67			
Miscellaneous general expense	3,921,482.59	3,921,482.59			
Subtotals, operation	$ 42,082,269.35	$ 40,833,157.91	$ 16,799.51	$ 1,232,311.93	$
Service and clearing accounts	3,332,029.69	3,332,029.69			
Bond interest and maturities	89,704,430.45	87,794,163.45		1,910,267.00	
Totals	$696,132,265.03	$553,396,899.13	$ 17,614,862.60	$122,551,603.18	$ 2,568,900.12

Table No. 9

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES

From 1917 to June 30, 1954

Source of Income	1917 to 1947 Inclusive	1948	1949	1950	1951
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$ .....
Bond sales (including accrued interest)	54,577,920.04	.....	.....	.....	14,769,083.33
Motor vehicle license fees	94,120,223.96	2,871,162.66	3,117,269.51	10,086,995.73	9,274,830.69
Gasoline tax	203,838,161.30	20,184,096.96	22,280,557.40	27,066,057.99	28,694,764.70
Diesel fuel tax	1,132,178.94	61,959.58	.....	15,743.65	39,014.77
Motor transportation fees	20,540,849.19	5,279,130.46	4,985,254.93	5,069,764.66	6,027,682.67
One-quarter mill property tax	1,724,032.33	.....	.....	.....	.....
Fines for traffic law violations	1,055,001.17	253,574.27	250,139.45	270,410.41	327,296.07
Cash discounts	715,292.59	48,824.66	44,032.12	24,684.55	21,714.66
Contributions to cities withheld	.....	250,000.00	375,000.00	250,000.00	250,000.00
Receipts from counties to apply on loans	.....	.....	.....	422,849.23	563,798.99
Refund of unexpended balance of state police contributions	.....	.....	.....	241,155.49	.....
Subtotals, state funds (gross)	$377,798,077.66	$ 28,948,748.59	$ 31,052,253.41	$ 43,447,661.71	$ 59,968,185.88
Less contributions to state police	$ 5,633,390.64	$ 1,035,763.45	$ 1,034,746.51	$ 1,018,332.50	$ 1,083,749.75
Less contributions to counties	35,233,057.60	5,078,975.14	5,557,875.51	7,436,605.25	8,538,220.61
Less contributions to state general fund	313,103.37	.....	.....	.....	.....
Less contributions to cities	3,425,874.90	2,663,328.79	4,108,624.45	3,616,934.59	4,357,242.74
Less loans to counties	.....	.....	1,119,237.78	8,360.19	.....
Subtotals, state funds (net)	$333,192,651.15	$20,170,681.21	$ 19,231,769.16	$ 31,367,429.18	$ 45,988,972.78
County cooperative funds	$ 15,879,006.49	$ 19,722.70	$ 269,590.62	$ 150,124.60	$ 256,393.83
Federal cooperative funds	76,365,363.26	6,180,173.46	6,555,119.04	6,586,420.35	7,327,746.25
Miscellaneous cooperative funds	1,142,936.31	31,318.34	71,522.66	214,307.28	553,510.52
Totals	$426,579,957.21	$ 26,401,895.71	$ 26,128,001.48	$ 38,318,281.41	$ 54,126,623.38

Table No. 9—Continued

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES

From 1917 to June 30, 1954

Source of Income	1917 to 1951 Inclusive	1952	1953	1954 (to June 30)	1917 to June 30, 1954
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$ 94,418.14
Bond sales (including accrued interest)	69,347,003.37	14,836,604.17	41,438,208.75	.....	125,621,816.29
Motor vehicle license fees	119,470,482.55	9,968,662.65	9,750,122.49	5,429,836.55	144,619,104.24
Gasoline tax	302,063,638.35	29,950,450.31	30,369,918.97	12,805,771.15	375,189,778.78
Diesel fuel tax	1,248,896.94	48,362.91	44,560.55	20,318.09	1,362,138.49
Motor transportation fees	41,902,681.91	6,675,148.30	9,499,848.86	4,225,859.28	62,303,538.35
One-quarter mill property tax	1,724,032.33	.....	.....	.....	1,724,032.33
Fines for traffic law violations	2,156,421.37	393,408.71	386,070.48	175,622.41	3,111,522.97
Cash discounts	854,548.58	25,687.35	31,356.14	20,463.71	932,055.78
Contributions to cities withheld	1,125,000.00	250,000.00	250,000.00	125,000.00	1,750,000.00
Receipts from counties to apply on loans	986,648.22	140,949.75	20,000.00	.....	1,147,597.97
Refund of unexpended balance of state police contributions	241,155.49	47,854.08	.....	.....	289,009.57
Interest on loan of bond funds	.....	52,417.27	248,629.84	423,555.21	724,602.32
Subtotals, state funds (gross)	$541,214,927.25	$ 62,389,545.50	$ 92 038,716.08	$ 23,226,426.40	$718,869,615.23
Less contributions to state police	$ 9,805,982.85	$ 1,149,167.00	$ 1,356,573.50	$ 781,990.00	$ 13,093,713.35
Less contributions to counties	61,844,734.11	8,776,276.26	9,262,118.90	4,742,431.96	84,625,561.23
Less contributions to state general fund	313,103.37	.....	.....	.....	313,103.37
Less contributions to cities	18,172,005.47	4,564,568.52	4,835,724.03	2,739,461.29	30,311,759.31
Less loans to counties	1,127,597.97	.....	20,000.00	.....	1,147,597.97
Subtotals, state funds (net)	$449,951,503.48	$ 47,899,533.72	$ 76,564,299.65	$ 14,962,543.15	$589,377,880.00
County cooperative funds	$ 16,574,838.24	$ 382,570.69	$ 482,206.33	$ 175,247.34	$ 17,614,862.60
Federal cooperative funds	103,014,822.36	7,334,398.41	8,859,076.91	3,472,673.50	122,680,971.18
Miscellaneous cooperative funds	2,013,595.11	357,570.45	236,740.71	72,984.23	2,680,890.50
Totals	$571,554,759.19	$ 55,974,073.27	$ 86,142,323.60	$ 18,683,448.22	$732,354,604.28

Table No. 10

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1954

The expenditures in this table include all expenditures in connection with work handled under the direct supervision of the State Highway Commission during the period December 1, 1916 to June 30, 1954.

Classification of Expenditures	1917 to 1947 Inclusive	1948	1949	1950	1951
Construction, primary highways	$168,719,668.37	$ 10,509,374.83	$ 11,388,936.64	$ 9,034,863.84	$ 14,042,588.63
Construction, secondary highways	16,976,905.57	2,782,024.91	1,566,291.64	1,886,605.55	2,988,789.63
Construction, county roads	5,990,848.04	1,531,579.44	1,088,628.54	2,322,819.08	1,887,853.64
Cooperation in forest road work	6,368,679.46	190,000.00	150,000.00	1,281,000.00	75,000.00
City allotment projects	.....	217,434.24	286,049.42	251,819.23	339,641.68
Minor betterments	8,137,964.99	710,390.36	854,340.30	538,507.47	644,733.10
Surveys and engineering county work	5,700,707.45	331,596.53	683,894.37	804,572.53	1,013,651.60
Subtotals, construction	$211,894,773.88	$ 16,272,400.31	$ 16,018,140.91	$ 16,120,187.70	$ 20,992,258.28
Real property negotiation expense	$ 607,889.97	$ 96,013.79	$ 102,016.52	$ 94,988.61	$ 114,081.28
Purchase of rights of way, quarries, etc.	7,808,977.97	1,744,009.08	1,988,679.32	2,083,393.58	3,344,484.03
Purchase of parks	852,042.88	Cr. 3,956.10	77,883.45	99,980.81	70,383.01
Improvements in parks	343,911.82	89,765.42	165,930.53	239,415.40	341,179.81
Improvements at maintenance stations, etc.	1,203,777.92	218,155.95	319,585.61	1,488,234.01	983,641.05
Equipment purchases, sales and depreciation	1,402,447.94	697,926.23	588,363.18	628,004.97	267,644.42
Subtotals, capital outlays (including construction)	$224,113,822.38	$ 19,114,314.68	$ 19,260,599.52	$ 20,754,205.08	$ 26,113,671.88

Special maintenance	$ 10,014,995.76	$ 819,649.24	$ 1,033,528.15	$ 814,301.07	$ 329,409.40
General maintenance, primary	59,702,759.23	5,935,052.75	7,472,267.05	7,174,948.13	7,630,784.53
General maintenance, secondary	11,443,078.61	1,874,415.78	2,362,453.29	2,300,616.27	2,343,306.95
Maintenance of county roads, signs, etc.	228,090.08	19,494.30	20,358.35	20,400.02	9,293.82
Maintenance of city streets	367,703.26	Cr. 1,967.23	1,132.61	.....	.....
District maintenance superintendence	2,500,193.83	203,407.38	240,104.46	263,639.65	278,787.59
Subtotals, maintenance	$ 84,256,820.77	$ 8,850,052.22	$ 11,129,843.91	$ 10,573,905.14	$ 10,591,582.29
Administration and general supervision	$ 9,367,947.60	$ 904,273.86	$ 1,090,432.89	$ 1,244,406.72	$ 1,482,222.16
Planning and traffic surveys	1,492,410.98	228,709.26	271,546.00	238,738.56	291,008.35
Travel information bureau	1,133,093.78	254,708.01	230,937.04	218,262.62	227,228.51
Operation of parks	596,367.09	169,354.04	232,129.36	276 947.54	346,434.95
Operation of drawbridges and ferries	1,585,326.84	146,900.49	182,093.83	218,043.08	197,308.01
Maintenance station and truck scale upkeep	379,396.10	68,166.01	111,177.83	68,374.90	97,033.60
Radio communication system	193,817.74	20,404.87	22,468.37	26,970.33	29,330.52
Truck load inspection	534,148.67	173,769.85	177,420.41	223,512.70	296,182.52
Contribution to retirement funds	408,908.19	370,313.64	418,308.86	489,293.84	492,454.33
Miscellaneous	2,688,136.73	156,798.07	121,676.47	213,628.70	432,506.77
Subtotals, operation	$ 18,379,553.72	$ 2,493,398.10	$ 2,858,191.06	$ 3,218,178.99	$ 3,891,709.72
Service and clearing accounts	449,990.20	226,131.12	452,710.74	451,004.69	607,789.07
Bond interest and maturities	82,068,131.87	604,487.29	512,110.69	397,404.66	346,676.01
Totals	$409,268,318.94	$ 31,288,383.41	$ 34,213,455.92	$ 35,394,698.56	$ 41,551,428.97

Table No. 10—Continued

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1954

Classification of Expenditures	1952	1953	1954 (to June 30)	Reclassification Transfers	1917 to June 30, 1954
Construction, primary highways	$ 25,830,259.79	$ 28,093,379.63	$ 10,634,176.82	Cr.$4,069,181.31	$274,184,067.24
Construction, secondary highways	3,579,355.47	2,786,964.82	675,769.56	2,082,554.99	35,325,262.14
Construction, county roads	1,799,645.53	2,306,132.94	461,280.56	1,920,346.84	19,309,134.61
Cooperation in forest road work	26,493.82	20,364.65	881.71	.....	8,112,419.64
City allotment projects	284,440.40	265,041.73	27,221.00	.....	1,671,647.70
Minor betterments	598,439.18	764,228.82	363,718.32	59.00	12,612,381.54
Surveys and engineering county work	1,251,350.13	1,371,955.14	771,078.26	.....	11,928,806.01
Subtotals, construction	$ 33,369,984.32	$ 35,608,067.73	$ 12,934,126.23	Cr.$ 66,220.48	$363,143,718.88
Real property negotiation expense	140,493.84	154,153.09	77,623.62	.....	1,387,260.72
Purchase of rights of way, quarries, etc.	6,046,721.58	4,103,355.91	3,537,931.61	2,500.00	30,660,053.08
Purchase of parks	58,773.16	Cr. 20,143.46	Cr. 26,094.27	.....	1,108,869.48
Improvements in parks	396,471.08	477,507.64	229,687.65	21,601.40	2,305,470.75
Improvements of maintenance stations, etc.	495,628.04	742,759.24	197,303.25	40,954.13	5,690,039.20
Equipment purchases, sales and depreciation	398,395.52	332,985.15	122,302.74	.....	4,438,070.15
Subtotals, capital outlays (including construction)	$ 40,906,467.54	$ 41,398,685.30	$ 17,072,880.83	Cr.$ 1,164.95	$408,733,482.26

Special maintenance	$ 432,821.02	$ 348,387.60	$ 49,336.36	$	$ 13,842,428.60
General maintenance, primary	7,908,155.04	7,522,247.32	3,776,336.13	Cr. 2,464,697.62	104,657,852.56
General maintenance, secondary	2,568,931.51	2,647,992.21	1,255,889.57	1,900,519.86	28,697,204.05
Maintenance of county roads, signs, etc.	21,604.17	36,134.92	20,084.15	538,118.76	913,578.57
Maintenance of city streets	.....	.....	.....	.....	366,868.64
District maintenance superintendence	289,987.95	.....*	.....*	26,000.00	3,802,120.86
Subtotals, maintenance	$ 11,221,499.69	$ 10,554,762.05	$ 5,101,646.21	Cr.$ 59.00	$152,280,053.28
Administration and general supervision	$ 1,695,800.95	$ 2,196,885.50	$ 1,195,950.62	$ 3,723.95	$ 19,181,644.25
Planning and traffic surveys	308,566.91	371,347.04	205,650.80	.....	3,407,977.90
Travel information bureau	255,186.98	281,211.19	220,040.99	.....	2,820,669.12
Operation of parks	314,885.31	366,826.87	164,740.35	.....	2,467,685.51
Operation of drawbridges and ferries	216,408.66	236,418.93	148,608.64	.....	2,931,108.48
Maintenance station and truck scale upkeep	120,566.59	135,397.84	41,172.81	41,649.91	1,062,935.59
Radio communication system	41,447.19	48,232.63	26,815.38	.....	409,487.03
Truck load inspection	328,231.42	371,037.41	191,747.98	19,082.25	2,315,133.21
Contribution to retirement funds	510,649.36	533,432.57	340,784.88	.....	3,564,145.67
Miscellaneous	186,033.50	164,734.90	21,199.61	Cr. 63,232.16	3,921,482.59
Subtotals, operation	$ 3,977,776.87	$ 4,705,524.88	$ 2,556,712.06	$ 1,223.95	$ 42,082,269.35
Service and clearing accounts	42,346.89	1,001,513.27	100,543.71	.....	3,332,029.69
Bond interest and maturities	1,406,337.57	2,346,706.43	2,022,575.93	.....	89,704,430.45
Totals	$ 57,554,428.56	$ 60,007,191.93	$ 26,854,358.74	$	$696,132,265.03

* District maintenance supervision carried in administration and general supervision in 1953 and 1954.

Table No. 11

PRIMARY HIGHWAY CONSTRUCTION EXPENDITURES SUMMARIZED BY HIGHWAYS

From 1917 to June 30, 1954

Kinds of expenditures are the same as included in Table No. 13

Hwy. No.	Highway	Total Expended	Expenditures by Funds			
			State	County	Federal	Miscellaneous
1W.	Pacific, West	$ 19,886,923.93	$ 11,478,281.53	$ 359,482.68	$ 8,003,144.08	$ 46,015.64
1E.	Pacific, East	16,870,290.43	8,350,003.47	300,281.44	7,572,905.41	147,100.11
1.	Pacific, Jct. City-South	41,962,289.39	32,233,660.19	478,720.75	9,081,533.31	168,375.14
2.	Columbia River	46,805,848.80	33,102,105.46	228,280.51	13,194,487.72	280,975.11
3.	Oswego	1,055,839.47	704,429.65	168,309.82	145,600.00	37,500.00
4.	The Dalles-California	13,360,713.51	7,870,316.23	952,854.05	4,429,032.42	108,510.81
5.	John Day	7,500,063.83	4,060,890.64	599,304.42	2,837,868.77	2,000.00
6.	Old Oregon Trail	15,870,159.47	8,514,585.45	642,126.12	6,254,148.27	459,299.63
7.	Central Oregon	6,312,747.79	4,271,646.91	154,287.80	1,886,813.08	
8.	Oregon-Washington	2,078,952.07	1,552,611.86	72,649.31	448,547.06	5,143.84
9.	Oregon Coast	47,035,395.82	32,937,836.01	2,033,414.63	11,987,571.31	76,573.87
10.	Willowa Lake	3,192,361.63	1,784,483.67	542,380.21	860,417.75	5,080.00
11.	Enterprise-Lewiston	1,179,693.35	875,009.86	71,621.49	233,062.00	
12.	Baker-Homestead	1,794,473.57	831,216.10	377,811.17	530,668.12	54,778.18
13.	Baker-Unity	2,461,665.46	1,579,715.16	331,113.14	510,999.35	39,837.31
14.	Crooked River	467,510.27	369,009.29	98,500.98		
15.	McKenzie	2,665,391.64	1,470,853.07	427,755.02	751,574.76	15,208.79
16.	Santiam	3,471,827.23	2,307,645.70	232,885.28	886,635.96	44,660.29
17.	McKenzie-Bend	698,168.35	382,659.15	5,509.20	310,000.00	
18.	Willamette	4,946,997.83	3,134,494.08	311,897.95	1,371,835.29	128,770.51
19.	Fremont	2,055,711.52	978,733.67	190,273.36	886,704.49	
20.	Klamath Falls - Lakeview	3,164,465.02	2,294,739.37	265,269.22	600,679.65	3,776.78
21.	Green Springs	2,152,959.14	1,129,779.72	557,877.85	438,529.42	26,772.15
22.	Crater Lake	4,002,506.65	2,116,824.69	195,895.65	1,689,786.31	
23.	Dairy-Bonanza	123,544.72	88,680.92	34,863.80		
24.	Burns-Crane	818,821.50	366,096.40	48,156.79	404,568.31	
25.	Redwood	1,365,978.74	1,034,340.97	54,507.82	277,129.95	
26.	Mt. Hood	2,797,613.70	2,073,688.29	505,287.08	214,772.63	3,865.70
27.	Alsea	2,126,035.68	1,589,779.72	278,757.08	257,498.88	
28.	Pendleton-John Day	1,964,890.73	1,044,030.54	162,236.66	758,371.10	252.43
29.	Tualatin Valley	2,930,678.68	2,165,209.73	177,813.38	574,956.64	12,698.93
30.	Willamina-Salem	3,494,500.56	1,995,631.33	295,472.12	1,189,692.01	13,705.11
31.	Albany-Corvallis	606,488.89	139,710.46	130,101.15	299,593.00	37,084.28
32.	Three Rivers	642,123.84	561,833.41	21,646.19	58,644.24	
33.	Corvallis-Newport	3,419,113.72	2,832,577.76	274,379.35	303,536.35	8,620.26
34.	Siuslaw	2,617,547.92	2,047,612.96	476,293.56	93,641.40	
35.	Coos Bay-Roseburg	2,801,053.28	1,479,986.87	649,440.43	655,525.98	16,100.00
36.	Pendleton-Cold Springs	470,742.01	199,268.75	191,239.44	80,233.82	
37.	Wilson River	3,286,828.71	2,458,517.42		828,311.29	
38.	Oregon Caves	476,267.83	462,267.83	14,000.00		
39.	Salmon River	2,516,367.92	1,784,760.24	58,106.99	673,500.69	
40.	Beaverton-Hillsdale	349,852.19	212,599.22	61,252.97	76,000.00	
41.	Ochoco	3,880,193.70	2,668,909.87	150,281.19	1,058,502.64	2,500.00
42.	Sherman	1,595,182.91	646,233.27	360,879.73	586,322.12	1,747.79
43.	Monmouth-Independence	70,285.04	70,285.04			
44.	Wapinitia	361,672.80	207,412.63		154,260.17	
45.	Umpqua	2,426,406.93	918,455.38	366,174.97	1,141,776.58	
46.	Necanicum	729,594.68	420,736.07	148,986.77	159,871.84	
47.	Sunset	8,513,036.13	4,613,130.51	92,000.00	3,807,905.62	
48.	John Day-Burns	476,896.92	297,904.92		178,992.00	
49.	Lakeview-Burns	642,955.10	394,910.39	31,604.06	216,440.65	
50.	Klamath Falls-Malin	1,614,910.28	1,212,129.10	77,816.14	306,070.28	18,894.76
51.	Wilsonville-Hubbard	841,147.09	473,156.89		367,990.20	
52.	Heppner	1,765,511.52	1,189,439.34	315,066.35	254,796.00	6,209.83
53.	Warm Springs	3,194,378.52	1,704,522.67		1,489,855.85	
54.	Umatilla-Stanfield	383,731.54	223,492.35	73,475.05	86,764.14	
55.	Halfway	254,113.42	93,075.99	122,798.01	38,239.42	
56.	Banfield Expressway	7,610,294.42	6,943,340.42		666,954.00	
57.	Portland-Salem Expr.	9,124,460.28	8,545,554.95		578,905.33	
	Flight Strips	1,130,789.90	625.36		1,130,164.54	
	Undistributed, all state	277,835.51	277,835.51			
	Undistributed, county general	91,265.34	55,656.48	35,608.86		
	Totals	$328,786,068.82	$218,324,930.88	$14,806,747.99	$93,882,332.70	$ 1,772,057.25

Table No. 12

PRIMARY HIGHWAY MAINTENANCE EXPENDITURES SUMMARIZED BY HIGHWAYS

From 1917 to June 30, 1954

Kinds of expenditures are same as included in Table 14

Hwy. No.	Highway	Total Expended	Expenditures by Funds			
			State	County	Federal	Miscellaneous
1W.	Pacific, West	$ 2,583,154.62	$ 2,576,956.69	$ 6,197.93	$	$
1E.	Pacific, East	4,058,775.55	3,826,515.64	1,167.26	167,898.00	63,194.65
1.	Pacific, Jct. City-South	7,331,041.58	7,319,395.88	11,645.70		
2.	Columbia River	8,398,593.76	8,384,272.00	12,556.40	870.80	894.56
3.	Oswego	360,492.83	360,492.83			
4.	The Dalles-California	7,075,345.96	7,064,917.85	769.57	9,658.54	
5.	John Day	5,176,234.99	5,171,177.00	5,057.99		
6.	Old Oregon Trail	7,803,274.21	7,759,533.85	1,228.14	42,512.22	
7.	Central Oregon	3,667,261.08	3,663,545.30	15.45	3,700.33	
8.	Oregon-Washington	705,307.94	701,026.77	4,281.17		
9.	Oregon Coast	13,443,661.46	13,399,050.48	4,501.67	39,109.31	1,000.00
10.	Wallowa Lake	2,211,096.31	2,211,096.31			
11.	Enterprise-Lewiston	525,472.78	525,472.78			
12.	Baker-Homestead	801,846.99	801,751.28	95.71		
13.	Baker-Unity	747,515.14	747,515.14			
14.	Crooked River	219,947.82	219,947.82			
15.	McKenzie	2,610,186.07	2,598,886.56		11,299.51	
16.	Santiam	2,917,482.31	2,906,718.15		7,544.16	3,220.00
17.	McKenzie-Bend	355,731.75	352,075.85		3,655.90	
18.	Willamette	2,946,129.93	2,946,129.93			
19.	Fremont	1,821,018.51	1,807,926.68		13,091.83	
20.	Klamath Falls-Lakeview	1,805,444.28	1,803,794.86		1,649.42	
21.	Green Springs	1,836,794.93	1,836,594.16	200.77		
22.	Crater Lake	1,892,728.71	1,858,434.35		34,294.36	
23.	Dairy-Bonanza	119,896.06	119,896.06			
24.	Burns-Crane	276,882.71	276,786.24	96.47		
25.	Redwood	945,581.20	945,581.20			
26.	Mt. Hood	3,045,097.16	3,034,546.12		10,551.04	
27.	Alsea	1,472,972.85	1,472,972.85			
28.	Pendleton-John Day	2,286,877.57	2,286,877.57			
29.	Tualatin Valley	1,034,558.40	1,024,565.19	9,993.21		
30.	Willamina-Salem	577,099.11	577,046.16	52.95		
31.	Albany-Corvallis	184,071.86	183,271.86	800.00		
32.	Three Rivers	1,279,134.98	1,262,197.53	16,937.45		
33.	Corvallis-Newport	2,142,961.49	2,140,370.70	320.50	2,270.29	
34.	Siuslaw	1,912,667.14	1,901,174.83		11,492.31	
35.	Coos Bay-Roseburg	3,015,717.74	3,004,821.46	3,838.17	7,058.11	
36.	Pendleton-Cold Springs	365,430.99	365,430.99			
37.	Wilson River	1,577,933.07	1,577,933.07			
38.	Oregon Caves	200,789.79	200,789.79			
39.	Salmon River	1,328,394.07	1,328,093.15	300.92		
40.	Beaverton-Hillsdale	205,566.18	203,826.23	1,739.95		
41.	Ochoco	2,268,721.99	2,268,721.99			
42.	Sherman	1,494,660.15	1,487,352.99		7,307.16	
43.	Monmouth-Independence	84,706.26	84,706.26			
44.	Wapinitia	623,753.56	623,753.56			
45.	Umpqua	990,154.22	990,154.22			
46.	Necanicum	817,136.07	817,136.07			
47.	Sunset	1,968,820.62	1,968,820.62			
48.	John Day-Burns	875,268.12	875,268.12			
49.	Lakeview-Burns	761,903.14	761,903.14			
50.	Klamath Falls-Malin	605,775.65	605,775.65			
51.	Wilsonville-Hubbard	32,201.84	32,201.84			
52.	Heppner	1,081,301.68	1,076,710.19		4,591.49	
53.	Warm Springs	1,079,015.41	1,079,015.41			
54.	Umatilla-Stanfield	115,838.98	115,838.98			
55.	Halfway	200,183.09	200,082.64	100.45		
56.	Banfield Expressway	2,141.09	2,141.09			
57.	Portland-Salem Expr.	3,313.56	3,313.56			
	Maintenance Supervision	3,098,844.86	3,098,844.86			
	Undistributed	144,943.67	144,943.67			
	Totals	$119,514,855.84	$118,986,094.02	$ 81,897.83	$ 378,554.78	$ 68,309.21

Table No. 13

PRIMARY HIGHWAY CONSTRUCTION EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1954

This table gives the totals of the expenditures made for construction work upon each of the several primary state highways during the 38-year period ending June 30, 1954. It includes expenditures for construction, betterments, surveys, rights of way and state expenditures on forest highway work.

County	Total Expended	Expenditures by Funds			
		State	County	Federal	Miscellaneous
Baker	$ 8,275,215.82	$ 4,333,916.37	$ 1,007,557.69	$ 2,799,124.26	$ 134,617.50
Benton	4,727,598.74	3,212,088.32	372,439.94	1,109,559.64	33,510.84
Clackamas	9,845,959.12	7,028,663.91	482,535.78	2,194,752.37	140,007.06
Clatsop	11,583,864.00	6,612,148.72	448,340.54	4,509,621.32	13,753.42
Columbia	4,751,167.29	3,791,308.98	12,060.23	946,095.45	1,702.63
Coos	14,298,344.44	10,373,961.45	821,548.46	3,070,463.59	32,370.94
Crook	1,615,793.98	1,120,444.01	192,238.85	300,611.12	2,500.00
Curry	8,439,471.83	6,692,174.49	216,142.72	1,531,154.62	
Deschutes	5,388,006.18	3,831,746.04	152,817.14	1,382,097.50	21,345.50
Douglas	30,043,694.37	23,584,521.97	1,213,134.95	5,206,093.91	39,943.54
Gilliam	5,289,945.67	3,512,450.98	266,278.07	1,509,216.62	2,000.00
Grant	4,751,346.92	2,576,860.45	188,600.65	1,985,885.82	
Harney	4,384,720.66	2,327,878.93	128,701.27	1,928,140.46	
Hood River	12,861,973.34	10,893,749.76	283,001.46	1,649,860.60	35,361.52
Jackson	12,892,311.60	8,558,137.54	523,074.48	3,762,492.72	48,606.86
Jefferson	2,245,931.66	1,200,121.03	92,282.18	940,061.59	13,466.86
Josephine	6,689,348.07	4,572,095.03	110,077.78	1,998,196.27	8,978.99
Klamath	13,677,336.11	8,372,513.29	681,622.94	4,519,970.26	103,229.62
Lake	3,496,637.72	2,194,518.61	233,414.80	1,068,704.31	
Lane	19,693,473.99	12,355,980.18	1,784,732.06	5,308,601.85	244,159.90
Lincoln	12,157,476.38	9,097,688.64	220,223.57	2,838,817.20	746.97
Linn	7,563,541.27	4,281,849.76	444,522.78	2,740,609.91	96,558.82
Malheur	6,289,582.62	3,779,673.21	256,725.86	2,020,085.21	233,098.34
Marion	9,820,776.16	6,388,007.49	241,862.34	3,158,919.94	31,986.39
Morrow	2,963,064.89	1,827,307.13	311,879.96	817,667.97	6,209.83
Multnomah	31,946,795.65	20,461,235.17	62,825.83	11,321,805.18	100,929.47
Polk	5,251,738.64	3,168,563.38	155,023.89	1,919,909.72	8,241.65
Sherman	1,935,423.39	948,435.26	273,903.11	711,337.23	1,747.79
Tillamook	8,190,310.13	5,175,452.55	511,286.51	2,463,401.11	40,169.96
Umatilla	9,015,257.35	5,413,510.04	595,928.60	2,845,071.55	160,747.16
Union	7,265,041.56	4,129,559.04	602,607.02	2,358,993.30	173,882.20
Wallowa	2,546,302.50	1,596,288.02	361,995.78	588,018.70	
Wasco	14,150,636.63	8,923,139.73	868,761.50	4,348,505.74	10,229.66
Washington	13,152,070.88	9,375,627.09	100,412.78	3,664,777.22	11,253.79
Wheeler	4,011,926.76	2,613,759.41	171,598.91	1,226,568.44	
Yamhill	6,165,357.09	3,721,094.03	416,587.56	2,006,975.46	20,700.04
Flight Strips	1,130,789.90	625.36		1,130,164.54	
Undistributed	277,835.51	277,835.51			
Totals	$328,786,068.82	$218,324,930.88	$14,806,747.99	$93,882,332.70	$ 1,772,057.25
Construction	$274,184,067.24	$164,761,031.36	$14,287,614.28	$93,502,741.62	$ 1,632,679.98
Minor betterment	10,417,963.32	10,279,829.99	4,498.56	4,000.00	129,634.77
Rights of way	27,518,482.35	27,353,195.54	9,909.75	155,377.06	
Surveys	9,366,639.02	9,126,307.47	10,375.03	220,214.02	9,742.50
Forest highway cooperation	7,298,916.89	6,804,566.52	494,350.37		
Totals	$328,786,068.82	$218,324,930.88	$14,806,747.99	$93,882,332.70	$ 1,772,057.25

Table No. 14

PRIMARY HIGHWAY MAINTENANCE EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1954

This table gives the totals of the expenditures made for primary highway maintenance work in each of the several counties during the 38-year period ending June 30, 1954. It includes all expenditures for special maintenance and general maintenance.

County	Total Expended	Expenditures by Funds			
		State	County	Federal	Miscellaneous
Baker	$ 4,320,697.42	$ 4,320,501.26	$ 196.16	$	$
Benton	2,652,341.46	2,651,225.65	1,115.81		
Clackamas	3,158,133.33	3,157,892.36	240.97		
Clatsop	3,633,651.54	3,623,960.87	8,796.11		894.56
Columbia	1,451,982.16	1,451,982.16			
Coos	4,956,289.58	4,918,979.10	6,728.62	30,581.86	
Crook	1,241,672.72	1,241,672.72			
Curry	3,408,593.19	3,404,215.33	205.18	4,172.68	
Deschutes	3,609,624.07	3,597,377.72	240.10	12,006.25	
Douglas	6,050,586.79	6,046,445.96	4,140.83		
Gilliam	1,879,678.88	1,877,379.74	2,299.14		
Grant	3,372,459.06	3,370,028.89	2,430.17		
Harney	2,267,267.31	2,267,155.39	111.92		
Hood River	2,385,543.12	2,374,992.08		10,551.04	
Jackson	4,330,141.38	4,291,642.36	4,547.33	33,951.69	
Jefferson	1,547,378.28	1,541,557.36		5,820.92	
Josephine	2,000,369.57	1,998,727.98	1,641.59		
Klamath	6,956,170.72	6,951,941.91	48.52	4,180.29	
Lake	2,823,967.21	2,809,225.96		14,741.25	
Lane	8,203,399.61	8,181,963.63	1,899.06	19,536.92	
Lincoln	3,969,875.58	3,964,149.62	320.50	5,405.46	
Linn	3,351,554.42	3,341,851.84	333.54	6,149.04	3,220.00
Malheur	3,319,584.54	3,319,124.78	459.76		
Marion	1,341,915.30	1,341,704.89	210.41		
Morrow	1,644,768.54	1,637,200.32	2,976.73	4,591.49	
Multnomah	3,752,376.90	3,521,284.25		167,898.00	63,194.65
Polk	1,508,578.06	1,507,978.99	599.07		
Sherman	1,631,010.33	1,623,703.17		7,307.16	
Tillamook	4,418,878.13	4,400,820.83	8,779.59	8,277.71	1,000.00
Umatilla	5,260,907.63	5,212,925.40	4,599.21	43,383.02	
Union	3,431,997.48	3,431,482.79	514.69		
Wallowa	1,583,626.84	1,583,626.84			
Wasco	4,348,863.63	4,348,087.02	776.61		
Washington	2,247,776.27	2,236,235.52	11,540.75		
Wheeler	2,081,818.91	2,080,125.19	1,693.72		
Yamhill	2,127,587.35	2,113,135.61	14,451.74		
Supervision	3,098,844.86	3,098,844.86			
Undistributed	144,943.67	144,943.67			
Totals	$119,514,855.84	$118,986,094.02	$ 81,897.83	$ 378,554.78	$ 68,309.21
Special maintenance	$ 11,758,158.42	$ 11,361,144.25	$ 528.87	$ 329,957.96	$ 66,527.34
General maintenance	104,512,908.89	104,381,161.24	81,368.96	48,596.82	1,781.87
Supervision	3,098,844.86	3,098,844.86			
Undistributed	144,943.67	144,943.67			
Totals	$119,514,855.84	$118,986,094.02	$ 81,897.83	$ 378,554.78	$ 68,309.21

Table No. 15

SECONDARY STATE HIGHWAY CONSTRUCTION EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1954

This table gives the totals of the expenditures made for secondary highway construction work in each of the several counties during the 38-year period ending June 30, 1954. It includes expenditures for construction, minor betterments, surveys, rights of way and state expenditures in connection with forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 545,788.08	$ 321,488.08	$ ———	$ 224,300.00	$ ———
Benton	839,392.40	653,873.74	———	185,518.66	———
Clackamas	2,170,749.01	1,337,271.49	47,825.95	785,651.57	———
Clatsop	997,792.25	522,117.38	9,070.98	466,603.89	———
Columbia	563,619.03	311,048.20	———	252,570.83	———
Coos	1,770,872.46	980,720.61	2,000.00	788,151.85	———
Crook	1,329,378.96	746,626.34	64,606.79	518,145.83	———
Curry	37,094.99	14,215.73	———	22,879.26	———
Deschutes	544,186.74	344,544.43	36,245.19	163,397.12	———
Douglas	1,757,299.53	1,138,040.48	———	619,259.05	———
Gilliam	623,935.60	481,435.88	———	142,499.72	———
Grant	887,289.19	471,492.44	9,086.75	406,710.00	———
Harney	990,862.10	588,319.40	23,196.60	379,346.10	———
Hood River	432,440.78	281,488.10	———	150,952.68	———
Jackson	1,796,565.98	1,156,328.56	———	640,237.42	———
Jefferson	508,614.26	220,343.77	32,340.00	255,930.49	———
Josephine	474,697.91	246,023.30	———	228,674.61	———
Klamath	1,741,162.00	936,470.94	70,558.62	734,132.44	———
Lake	879,892.88	498,173.43	———	381,719.45	———
Lane	2,176,732.79	1,517,467.30	59,856.49	595,442.92	3,966.08
Lincoln	890,242.12	604,262.22	———	285,979.90	———
Linn	1,289,117.47	832,444.22	23,000.00	424,032.79	9,640.46
Malheur	3,436,720.97	1,317,251.72	———	2,106,204.87	13,264.38
Marion	3,700,072.01	2,493,255.06	2,012.45	1,181,551.17	23,253.33
Morrow	1,008,301.12	554,887.73	———	453,413.39	———
Multnomah	1,172,844.69	626,134.53	———	545,373.88	1,336.28
Polk	1,564,234.18	522,606.41	———	1,041,627.77	———
Sherman	520,262.81	390,453.81	———	129,809.00	———
Tillamook	394,283.69	327,324.90	———	66,958.79	———
Umatilla	1,512,550.24	954,332.17	142,939.72	415,278.35	———
Union	875,298.67	539,357.50	———	335,941.17	———
Wallowa	984,507.11	643,607.21	———	340,899.90	———
Wasco	520,400.46	312,455.03	5,461.43	202,484.00	———
Washington	927,684.40	494,580.23	———	433,104.17	———
Wheeler	116,713.82	76,967.82	5,000.00	34,746.00	———
Yamhill	1,031,533.03	710,538.26	5,012.92	309,265.85	6,716.00
Totals	$41,013,133.73	$24,167,948.42	$ 538,213.89	$16,248,794.89	$ 58,176.53
Construction	$35,325,262.14	$18,544,745.20	$ 536,430.52	$16,187,246.17	$ 56,840.25
Minor Betterment	2,091,154.37	2,089,043.91	774.18	———	1,336.28
Rights of Way	1,384,173.50	1,374,726.13	———	9,447.37	———
Surveys	1,512,716.57	1,459,606.03	1,009.19	52,101.35	———
Forest Highway Cooperation	699,827.15	699,827.15	———	———	———
Totals	$41,013,133.73	$24,167,948.42	$ 538,213.89	$16,248,794.89	$ 58,176.53

Table No. 16

SECONDARY HIGHWAY MAINTENANCE EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1954

This table gives the totals of the expenditures made for secondary highway maintenance work in each of the several counties during the 38-year period ending June 30, 1954. It includes expenditures for special maintenance and general maintenance.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 636,567.93	$ 636,534.20	$ 33.73	$	$
Benton	502,883.74	502,883.74			
Clackamas	2,084,846.19	2,084,846.19			
Clatsop	1,133,718.01	1,127,800.76		5,917.25	
Columbia	968,087.29	968,087.29			
Coos	1,433,783.77	1,433,783.77			
Crook	657,908.21	657,908.21			
Curry	34,833.25	34,833.25			
Deschutes	440,229.09	440,229.09			
Douglas	1,130,326.47	1,130,326.47			
Gilliam	209,545.75	209,545.75			
Grant	162,705.36	162,705.36			
Harney	392,111.83	392,111.83			
Hood River	292,970.48	292,970.48			
Jackson	978,444.31	973,631.19	275.14	4,537.98	
Jefferson	180,731.25	180,731.25			
Josephine	476,203.21	474,751.24		1,451.97	
Klamath	1,523,473.35	1,520,070.18		3,403.17	
Lake	306,283.54	306,283.54			
Lane	1,976,483.67	1,976,375.67	108.00		
Lincoln	630,475.19	630,475.19			
Linn	1,649,942.51	1,649,492.23	450.28		
Malheur	1,557,859.64	1,557,859.64			
Marion	1,578,137.30	1,578,137.30			
Morrow	670,269.44	670,269.44			
Multnomah	1,189,042.17	1,175,574.62			13,467.55
Polk	1,174,806.67	1,174,806.67			
Sherman	180,043.76	180,043.76			
Tillamook	332,516.44	332,516.44			
Umatilla	1,612,558.68	1,607,474.03	3,071.83	2,012.82	
Union	1,046,703.54	1,046,703.54			
Wallowa	291,092.67	291,092.67			
Wasco	133,748.48	133,748.48			
Washington	1,399,359.30	1,399,359.30			
Wheeler	312,356.77	312,356.77			
Yamhill	1,485,287.39	1,485,287.39			
Supervision	701,080.30	701,080.30			
Totals	$31,467,416.95	$31,432,687.23	$ 3,938.98	$ 17,323.19	$ 13,467.55
Special Maintenance	$ 2,069,132.60	$ 2,039,757.73	$ 1,987.30	$ 13,920.02	$ 13,467.55
General Maintenance	28,697,204.05	28,691,849.20	1,951.68	3,403.17	
Supervision	701,080.30	701,080.30			
Totals	$31,467,416.95	$31,432,687.23	$ 3,938.98	$ 17,323.19	$ 13,467.55

Table No. 17

LOCAL ROAD AND STREET CONSTRUCTION EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1954

This table gives the total expenditures for construction work on roads and streets that are not on the state highway system. It includes county road construction, city allotment projects, minor betterments, surveys, rights of way and state expenditures on forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 332,804.55	$ 165,236.45	$ 32,741.98	$ 134,826.12	$
Benton	327,123.84	209,208.39	13,411.46	104,503.99	
Clackamas	561,450.98	256,497.97	52,797.25	248,876.35	3,279.41
Clatsop	291,030.50	146,440.33	23,382.79	100,768.88	20,438.50
Columbia	650,682.02	258,885.42	19,987.19	363,754.42	8,054.99
Coos	1,051,339.82	104,432.14	300,000.00	646,907.68	
Crook	307,995.36	172,904.30	14,832.36	120,258.70	
Curry	165,113.95	133,722.71	15,400.00		15,991.24
Deschutes	385,372.89	266,529.32	20,551.57	97,642.00	650.00
Douglas	2,540,690.69	1,531,318.87	79,428.28	918,241.33	11,702.21
Gilliam	43,797.93	15,122.60	12,833.33	15,842.00	
Grant	105,935.33	95,935.33	10,000.00		
Harney	61,880.33	58,703.33			3,177.00
Hood River	109,400.73	39,163.73	10,000.00	60,237.00	
Jackson	657,502.61	272,224.75	21,878.40	360,399.46	3,000.00
Jefferson	254,973.72	114,508.99	17,660.00	122,804.73	
Josephine	391,381.35	230,335.72	57,183.63	103,862.00	
Klamath	1,154,784.88	541,115.50	50,535.60	560,112.40	3,021.38
Lake	396,726.06	150,495.60	43,014.78	202,190.00	1,025.68
Lane	1,352,876.52	313,438.25	538,536.52	27,132.83	473,768.92
Lincoln	358,602.75	216,525.68	9,000.00	128,277.07	4,800.00
Linn	809,358.18	437,008.54	71,272.62	238,660.00	62,417.02
Malheur	259,219.81	104,902.23	38,996.58	115,321.00	
Marion	1,539,264.99	929,540.78	218,654.72	385,080.93	5,988.56
Morrow	142,788.68	84,608.75	5,878.93	52,301.00	
Multnomah	2,686,422.92	739,260.31	37,701.90	1,891,471.15	17,989.56
Polk	623,234.05	361,052.98	186,929.33	53,116.00	22,135.74
Sherman	298,973.65	163,685.73	8,419.50	126,868.42	
Tillamook	549,041.38	300,654.33	43,426.77	162,695.98	42,264.30
Umatilla	529,954.17	422,586.90	35,018.70	55,132.58	17,215.99
Union	522,845.65	255,556.45	5,000.00	260,052.45	2,236.75
Wallowa	169,598.50	114,478.68	10,770.60	43,055.00	1,294.22
Wasco	654,651.00	293,868.66	38,933.27	321,849.07	
Washington	1,075,768.99	572,201.61	57,487.48	437,875.23	8,204.67
Wheeler	234,913.77	110,928.19	17,479.58	106,506.00	
Yamhill	722,864.02	387,367.63	45,591.87	249,680.70	40,223.82
Totals	$22,320,366.57	$10,570,447.15	$ 2,164,736.99	$ 8,816,302.47	$ 768,879.96
Construction	$19,309,134.61	$ 7,859,156.74	$ 2,160,449.00	$ 8,754,811.68	$ 534,717.19
City Allotment Projects	1,671,647.70	1,437,484.93			234,162.77
Minor Betterments	103,263.85	103,263.85			
Rights of Way	180,832.86	146,876.50		33,956.36	
Surveys	941,811.95	909,989.53	4,287.99	27,534.43	
Forest Highway Cooperation	113,675.60	113,675.60			
Totals	$22,320,366.57	$10,570,447.15	$ 2,164,736.99	$ 8,816,302.47	$ 768,879.96

Table No. 18

LOCAL ROAD AND STREET MAINTENANCE EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1954

This table gives the total expenditures for maintenance work on roads and streets that are not on the state highway system. It includes expenditures for maintenance of county road signs, prior maintenance of sections of state highways which have been abandoned, and city street maintenance.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 117,810.82	$ 117,250.93	$ 559.89	$ .....
Benton	39,738.26	39,738.26	.....	.....
Clackamas	50,613.78	50,613.78	.....	.....
Clatsop	32,216.40	32,216.40	.....	.....
Columbia	15,029.19	15,029.19	.....	.....
Coos	19,368.89	17,055.87	.....	2,313.02
Crook	3,256.92	3,256.92	.....	.....
Curry	1,295.97	1,295.97	.....	.....
Deschutes	12,393.34	12,393.34	.....	.....
Douglas	43,285.33	42,642.94	642.39	.....
Gilliam	2,537.88	2,537.88	.....	.....
Grant	3,684.55	3,684.55	.....	.....
Harney	4,454.33	4,454.33	.....	.....
Hood River	10,923.41	10,923.41	.....	.....
Jackson	79,757.34	79,757.34	.....	.....
Jefferson	7,456.68	7,456.68	.....	.....
Josephine	43,737.55	43,737.55	.....	.....
Klamath	85,049.42	85,049.42	.....	.....
Lake	13,652.64	13,652.64	.....	.....
Lane	69,797.77	69,797.77	.....	.....
Lincoln	5,622.89	5,622.89	.....	.....
Linn	181,974.99	180,678.35	1,296.64	.....
Malheur	10,331.06	10,331.06	.....	.....
Marion	88,505.99	88,505.99	.....	.....
Morrow	5,396.67	5,396.67	.....	.....
Multnomah	85,925.99	85,925.99	.....	.....
Polk	104,885.46	104,885.46	.....	.....
Sherman	2,741.89	2,741.89	.....	.....
Tillamook	8,799.71	5,374.58	.....	3,425.13
Umatilla	53,986.33	53,890.37	28.49	67.47
Union	11,935.35	11,935.35	.....	.....
Wallowa	10,926.28	10,926.28	.....	.....
Wasco	12,040.14	12,040.14	.....	.....
Washington	32,416.57	32,416.57	.....	.....
Wheeler	1,408.52	1,408.52	.....	.....
Yamhill	22,626.48	22,626.48	.....	.....
Maintenance Supervision	2,195.70	2,195.70	.....	.....
Totals	$ 1,297,780.49	$ 1,289,447.46	$ 2,527.41	$ 5,805.62
Special Maintenance	$ 15,137.58	$ 15,070.11	$	$ 67.47
General Maintenance	913,578.57	908,738.14	2,527.41	2,313.02
City Street Maintenance	366,868.64	363,443.51	.....	3,425.13
Supervision	2,195.70	2,195.70	.....	.....
Totals	$ 1,297,780.49	$ 1,289,447.46	$ 2,527.41	$ 5,805.62

Table No. 19

FOREST HIGHWAY EXPENDITURES ON STATE HIGHWAY ROUTES CLASSIFIED BY COUNTIES

Years 1917 to 1953, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the Bureau of Public Roads, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing tables Nos. 11, 15, and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by highways see table No. 20.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 186,357.66	$ 44,845.60	$ 584.00	$ 140,928.06
Clackamas	2,044,390.15	525,124.95	.....	1,519,265.20
Coos	1,090,186.22	7,582.49	83,000.00	999,603.73
Crook	1,206,237.69	113,488.86	26,875.00	1,065,873.83
Curry	982,586.71	116,289.11	30,000.00	836,297.60
Deschutes	364,154.83	144,378.47	5,000.00	214,776.36
Douglas	5,394,122.68	1,843,798.62	275,054.98	3,275,269.08
Grant	3,144,925.04	159,639.74	250,046.25	2,735,239.05
Harney	1,125,324.17	.....	65,000.00	1,060,324.17
Hood River	756,801.96	314,844.19	.....	441,957.77
Jackson	1,399,717.10	296,095.20	3,438.81	1,100.183.09
Jefferson	350,725.39	56,000.00	13,000.00	281,725.39
Josephine	931,070.32	308,361.06	17,522.99	605,186.27
Klamath	1,059,276.67	209,114.95	179,954.97	670,206.75
Lake	1,214,815.93	227,455.92	.....	987,360.01
Lane	6,948,527.54	1,488,575.43	312,500.00	5,147,452.11
Lincoln	4,179,074.66	889,652.93	315,000.00	2,974,421.73
Linn	2,566,663.28	.....	202,014.00	2,364,649.28
Marion	6,216,157.18	476,493.82	173,586.00	5,566,077.36*
Morrow	140,057.14	.....	75,000.00	65,057.14
Multnomah	1,677,379.42	52,500.00	.....	1,624,879.42
Tillamook	1,052,580.61	328,153.51	18,624.69	705,802.41
Umatilla	1,145,210.86	155,287.23	145,718.32	844,205.31
Union	437,389.42	.....	.....	437,389.42
Wallowa	1,229,150.63	67,951.65	39,210.35	1,121,988.63
Wasco	918,509.96	180,844.08	25,000.00	712,665.88
Wheeler	1,089,946.85	105,060.12	29,900.00	954,986.73
Totals	$48,851,340.07	$ 8,111,537.93	$ 2,286,030.36	$38,453,771.78

* Includes $4,073,611.60 War Department funds expended on the North Santiam Highway.

Table No. 20
FOREST HIGHWAY EXPENDITURES ON STATE HIGHWAY ROUTES CLASSIFIED BY HIGHWAYS
Years 1917 to 1953, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the Bureau of Public Roads, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing tables Nos. 11, 15 and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by counties see table No. 19.

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures		
			By State	By County	By Federal Government
1.	Pacific	$ 2,670,900.47	$ 1,463,776.86	$ 23,000.00	$ 1,184,123.61
2.	Columbia River	1,934,828.37	117,500.00	.....	1,817,328.37
4.	The Dalles-California	648,505.02	178,806.28	149,592.81	320,105.93
5.	John Day	852,796.44	174,485.34	162,110.76	516,200.34
9.	Oregon Coast	4,837,460.21	1,076,497.86	233,000.00	3,527,962.35
11.	Enterprise-Lewiston	1,109,188.71	67,951.65	39,210.35	1,002,026.71
15.	McKenzie	903,228.73	429,278.06	20,000.00	453,950.67
16.	Santiam	2,133,278.05	56,000.00	131,000.00	1,946,278.05
18.	Willamette	3,561,695.30	196,000.00	37,500.00	3,328,195.30
19.	Fremont	357,494.37	879.37	.....	356,615.00
20.	Klamath Falls-Lakeview	913,390.38	226,919.50	.....	686,470.88
22.	Crater Lake	691,486.47	301,060.92	26,300.97	364,124.58
25.	Redwood	620,336.68	144,048.79	9,522.99	466,764.90
26.	Mt. Hood	1,530,901.16	566,436.42	.....	964,464.74
27.	Alsea	2,014,555.85	410,818.40	165,000.00	1,438,737.45
28.	Pendleton-John Day	1,897,816.01	185,287.23	202,218.32	1,510,310.46
32.	Three Rivers	423,943.55	149,528.51	18,624.69	255,790.35
34.	Siuslaw	1,996,290.83	708,521.94	260,000.00	1,027,768.89
38.	Oregon Caves	310,733.64	164,312.27	8,000.00	138,421.37
39.	Salmon River	1,034,305.79	180,000.00	.....	854,305.79
41.	Ochoco	1,968,966.75	218,548.98	31,775.00	1,718,642.77
44.	Wapinitia	772,332.88	281,376.80	25,000.00	465,956.08
45.	Umpqua	544,293.00	.....	128,001.65	416,291.35
48.	John Day-Burns	2,702,330.16	.....	97,019.49	2,605,310.67
53.	Warm Springs	380,456.69	.....	.....	380,456.69
	Subtotals primary highways	(36,811,515.51)	(7,298,035.18)	(1,766,877.03)	(27,746,603.30)
162.	North Santiam	7,069,326.40	476,493.82	257,600.00	6,335,232.58*
173.	Timberline	778,562.39	108,000.00	.....	670,562.39
181.	Siletz	147,634.94	.....	30,000.00	117,634.94
230.	Tiller-Trail	1,885,048.95	223,333.33	124,053.33	1,537,662.29
232.	Crater Lake-North	70,669.32	.....	.....	70,669.32
233.	West Diamond Lake	638,536.94	.....	.....	638,536.94
321.	Heppner-Spray	467,274.93	.....	100,000.00	367,274.93
330.	Weston-Elgin	583,383.78	.....	.....	583,383.78
341.	Ukiah-Hilgard	2,880.76	.....	.....	2,880.76
350.	Little Sheep Creek	119,961.92	.....	.....	119,961.92
421.	Klamath Lake	7,683.46	.....	.....	7,683.46
424.	Sand Creek	53,314.04	.....	.....	53,314.04
425.	East Diamond Lake	209,871.13	.....	7,500.00	202,371.13
.....	Cascade Lakes (State Coop.)	5,675.60	5,675.60	.....	.....
	Totals	$48,851,340.07	$ 8,111,537.93	$ 2,286,030.36	$38,453,771.78

* Includes $4,073,611.60 War Department funds expended on Niagara-Detroit Project.

Table No. 21

STATISTICS PERTAINING TO FOREST HIGHWAY WORK ON STATE HIGHWAYS

The statistics here given apply to highway work in the State of Oregon performed under the supervision of the Bureau of Public Roads. All of the work included is upon state highways at points where these highways are in or adjacent to National Forests. The work is financed under cooperative agreements between the federal government, the state, and the counties of the state, the federal funds being Oregon's proportionate share of funds annually appropriated by Congress for forest road work.

The amounts of county and federal government expenditures here given, and the mileages of work performed, are as reported by the Bureau of Public Roads. The amounts of state expenditures are as shown by the disbursement records of the State Highway Commission.

EXPENDITURES ON FOREST HIGHWAY WORK

Year	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
1918-1919-1920	$ 1,568,432.01	$ 809,261.58	$ 102,271.45	$ 656,898.98
1921-1922	1,630,589.13	724,970.53	67,142.21	838,476.39
1923-1924	3,788,011.33	1,092,660.31	725,942.05	1,969,408.97
1925-1926	2,068,546.50	759,762.58	481,431.18	827,352.74
1927-1928	1,404,682.06	250,943.85	245,875.15	907,863.06
1929-1930	2,144,897.80	778,986.98	150,050.00	1,215,860.82
1931-1932	3,898,040.00	856,085.58	299,474.39	2,742,480.03
1933-1934	3,981,315.25	167,330.80	210,586.74	3,603,397.71
1935-1936	2,264,461.55	257,501.65	Cr. 2,842.81	2,009,802.71
1937	1,513,778.74	112,500.00	.....	1,401,278.74
1938	944,053.77	Cr. 25,000.00	6,100.00	962,953.77
1939	1,002,309.57	35,000.00	.....	967,309.57
1940	685,648.96	.....	.....	685,648.96
1941	596,223.00	285,500.00	.....	310,723.00
1942	246,361.72	.....	.....	246,361.72
1943	16,504.44	Cr. 36,824.40	.....	53,328.84
1944	37,824.46	.....	.....	37,824.46
1945	116,994.79	.....	.....	116,994.79
1946	177,609.00	100,000.00	.....	77,609.00
1947	1,541,974.44	200,000.00	.....	1,341,974.44
1948	3,875,893.07	190,000.00	.....	3,685,893.07
1949	4,775,116.61	150,000.00	.....	4,625,116.61
1950	3,496,347.95	1,281,000.00	.....	2,215,347.95
1951	2,273,656.10	75,000.00	.....	2,198,656.10
1952	2,700,531.29	26,493.82	.....	2,674,037.47
1953	2,101,536.53	20,364.65	.....	2,081,171.88
Totals	$48,851,340.07	$ 8,111,537.93	$ 2,286,030.36	$38,453,771.78*

* Includes $4,073,611.60 War Department funds expended on the North Santiam Highway, $419,239.79 in 1947, $2,529,644.72 in 1948, $599,266.37 in 1949, $186,008.90 in 1950, $281,299.92 in 1951, $58,553.99 in 1952, Cr. $402.09 in 1953.

Table No. 21—Continued

MILEAGES OF FOREST HIGHWAY WORK COMPLETED ON STATE HIGHWAY SYSTEM

Year	Concrete Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surfacing (Miles)	Unoiled Surfacing (Miles)	Graded Only (Miles)
1918	.....	.....	.....	.....	4.30
1919	.....	.....	.....	.....	62.90
1920	.....	.....	.....	22.59	56.10
1921	.....	.....	.....	38.24	20.68
1922	.....	.....	.....	22.37	15.69
1923	.....	.....	.....	87.92	61.00
1924	.....	.....	.....	74.62	153.37
1925	.....	.....	.....	99.94	50.70
1926	.....	.....	.....	41.41	52.32
1927	.....	.....	.....	53.50	39.80
1928	.....	.....	.....	17.60	23.80
1929	.....	.....	.....	6.00	19.00
1930	.....	.....	.....	25.88	30.35
1931	.....	.....	.....	21.35	61.29
1932	.....	.....	.....	28.36	14.61
1933	.....	24.94	.....	74.31	28.33
1934	.....	24.65	53.51	18.08	19.65
1935	.....	.....	30.71	.....	8.38
1936	.....	.....	.....	43.59	41.84
1937	0.18	37.26	23.22	41.73	17.85
1938	.....	8.36	7.10	23.31	23.04
1939	.....	16.89	20.69	37.78	8.55
1940	.....	6.07	40.34	46.41	27.58
1941	.....	.....	.....	7.63	.....
1942	.....	5.21	3.87	16.72	13.03
1943	.....	5.24	.....	5.24	5.24
1944	.....	.....	.....	.....	.....
1945	.....	0.29	.....	0.29	0.29
1946	.....	.....	.....	.....	.....
1947	.....	.....	.....	.....	6.42
1948	.....	17.51	.....	17.51	5.08
1949	.....	.....	13.49	13.49	32.77
1950	.....	49.65	14.07	42.62	17.42
1951	.....	28.71	20.62	42.86	6.47
1952	.....	23.73	.....	23.37	19.71
1953	.....	47.80	.....	47.80	13.47
Totals	0.18	296.31	227.62	1,042.52	961.03

Table No. 22

COUNTY DISBURSEMENTS FOR ROAD PURPOSES

1948 to 1952, Inclusive

County	1948	1949	1950	1951	1952
Baker	$ 127,045	$ 148,088	$ 191,420	$ 229,371	$ 176,214
Benton	171,169	202,725	273,230	268,769	318,389
Clackamas	404,764	633,491	583,701	629,467	827,634
Clatsop	217,472	268,336	290,996	409,581	247,196
Columbia	184,166	183,680	247,299	209,004	369,366
Coos	381,869	496,656	520,478	514,907	548,553
Crook	52,280	93,706	108,048	104,831	139,661
Curry	30,000	70,000	61,650	74,872	84,921
Deschutes	136,581	157,353	181,167	191,227	245,571
Douglas	739,715	1,177,181	1,521,337	1,469,342	1,704,008
Gilliam	73,388	69,645	113,184	91,522	63,933
Grant	100,889	116,309	134,191	148,353	302,422
Harney	85,880	91,830	113,206	117,360	147,806
Hood River	102,327	137,414	156,570	154,333	157,358
Jackson	534,065	643,032	725,289	772,416	920,257
Jefferson	28,362	56,220	62,351	104,637	110,213
Josephine	223,811	229,701	226,483	327,400	408,425
Klamath	302,681	468,570	572,295	533,859	721,452
Lake	157,021	139,562	143,457	137,024	193,468
Lane	673,914	1,168,434	1,545,007	1,495,428	1,501,345
Lincoln	286,582	311,240	290,649	245,098	237,599
Linn	556,722	733,491	561,336	530,373	702,818
Malheur	110,610	344,067	463,755	356,665	363,103
Marion	528,684	680,953	586,701	713,757	767,002
Morrow	24,367	153,693	177,134	211,517	193,126
Multnomah	2,499,137	3,011,069	2,550,708	2,614,646	3,101,173
Polk	180,002	246,465	241,201	386,810	316,004
Sherman	48,500	56,696	66,212	75,520	113,808
Tillamook	252,906	382,420	287,178	288,386	291,608
Umatilla	975,015	788,109	488,725	493,823	444,469
Union	179,394	187,051	163,349	203,984	232,589
Wallowa	108,185	235,327	145,237	168,788	154,276
Wasco	128,521	206,437	285,706	1,242,619	2,332,532
Washington	457,138	528,768	529,466	647,352	783,823
Wheeler	42,774	49,989	101,490	68,909	62,759
Yamhill	222,069	277,432	307,459	336,567	366,036
Totals	$11,328,005	$14,745,140	$15,017,665	$16,568,517	$19,650,917

Table No. 23

COUNTY BOND AND WARRANT INDEBTEDNESS IN CONNECTION WITH ROADS AND BRIDGES

June 30, 1954

The information contained in this table was compiled by the State Treasurer.

County	Bonds Outstanding	Road Warrants Outstanding	Total Road and Bridge Debt	Sinking Fund or Cash on Hand	Net Road and Bridge Debt
Baker	$	$	$	$	$
Benton					
Clackamas					
Clatsop					
Columbia					
Coos	287,000.00		287,000.00	16,431.25	270,568.75
Crook					
Curry					
Deschutes					
Douglas					
Gilliam					
Grant	6,000.00		6,000.00	6,000.00	
Harney					
Hood River					
Jackson					
Jefferson					
Josephine					
Klamath	10,000.00		10,000.00	10,000.00	
Lake					
Lane					
Lincoln					
Linn					
Malheur					
Marion					
Morrow	5,500.00		5,500.00	5,500.00	
Multnomah	2,362,000.00		2,362,000.00	187,081.31	2,174,918.69
Polk					
Sherman					
Tillamook					
Umatilla	5,100,000.00		5,100,000.00		5,100,000.00
Union					
Wallowa					
Wasco	3,550,000.00		3,550,000.00	121,749.01	3,428,250.99
Washington		96,294.96	96,294.96	435.56	95,859.40
Wheeler					
Yamhill					
Totals	$11,320,500.00	$ 96,294.96	$11,416,794.96	$347,197.13	$11,069,597.83

Table No. 24

STATE HIGHWAY BOND INDEBTEDNESS ACCOUNT

Issues Prior to 1951

Calendar Year	Annual Principal	Annual Interest	Annual Total	Bonds Outstanding at End of Year
1917	$	$ 5,000.00	$ 5,000.00	$ 1,400,000.00
1918	.....	72,900.00	72,900.00	2,840,000.00
1919	.....	141,099.99	141,099.99	10,140,000.00
1920	.....	503,725.00	503,725.00	19,140,000.00
1921	.....	974,870.83	974,870.83	30,700,000.00
1922	125,000.00	1,521,266.67	1,646,266.67	36,075,000.00
1923	179,750.00	1,742,150.00	1,921,900.00	38,395,250.00
1924	334,500.00	1,824,240.00	2,158,740.00	38,060,750.00
1925	3,797,000.00	1,799,267.05	5,596,267.05	37,263,750.00
1926	1,197,000.00	1,722,761.65	2,919,761.65	36,066,750.00
1927	1,600,000.00	1,663,215.87	3,263,215.87	34,466,750.00
1928	1,750,000.00	1,586,060.99	3,336,060.99	32,716,750.00
1929	1,825,000.00	1,503,578.47	3,328,578.47	30,891,750.00
1930	1,925,000.00	1,418,314.70	3,343,314.70	30,466,750.00
1931	1,975,000.00	1,386,522.18	3,361,522.18	29,491,750.00
1932	2,975,000.00	1,369,435.06	4,344,435.06	27,516,750.00
1933	1,975,000.00	1,290,992.54	3,265,992.54	27,041,750.00
1934*	2,175,000.00	1,250,010.02	3,425,010.02	25,866,750.00
1935*	5,675,000.00	1,225,541.73**	6,900,541.73	25,691,750.00
1936*	2,950,000.00	1,089,213.37	4,039,213.37	23,441,750.00
1937***	2,800,000.00	984,228.06	3,784,228.06	21,641,750.00
1938***	3,550,000.00	877,764.27	4,427,764.27	18,841,750.00
1939	2,000,000.00	776,394.23	2,776,394.23	16,841,750.00
1940	2,075,000.00	683,724.19	2,758,724.19	14,766,750.00
1941	2,150,000.00	589,085.40	2,739,085.40	12,616,750.00
1942	2,125,000.00	493,790.36	2,618,790.36	10,491,750.00
1943	2,070,250.00	399,995.32	2,470,245.32	8,421,500.00
1944	1,915,500.00	308,610.28	2,224,110.28	6,506,000.00
1945	1,453,000.00	227,913.99	1,680,913.99	5,053,000.00
1946	1,053,000.00	166,998.95	1,219,998.95	4,000,000.00
1947	650,000.00	126,765.80	776,765.80	3,350,000.00
1948	500,000.00	104,109.53	604,109.53	2,850,000.00
1949	425,000.00	86,797.01	511,797.01	2,425,000.00
1950	325,000.00	72,171.99	397,171.99	2,100,000.00
1951	275,000.00	62,046.97	337,046.97	1,825,000.00
1952	275,000.00	52,984.45	327,984.45	1,550,000.00
1953	275,000.00	43,921.93	318,921.93	1,275,000.00
1954	275,000.00	34,859.41	309,859.41	1,000,000.00
1955	275,000.00	25,796.89	300,796.89	725,000.00
1956	200,000.00	17,531.25	217,531.25	525,000.00
1957	150,000.00	12,187.50	162,187.50	375,000.00
1958	150,000.00	8,437.50	158,437.50	225,000.00
1959	150,000.00	4,687.50	154,687.50	75,000.00
1960	75,000.00	937.50	75,937.50	.....
Totals	$ 55,650,000.00	$ 30,251,906.40	$ 85,901,906.40	

* Includes Coast Bridge short-term bonds.
** Includes $4,866.50 refund to cover accrued interest paid in by Ladd & Bush, Bankers, on Coast Bridge bonds.
*** Includes retirement of 1937 and 1938 short-term bonds.

Table No. 25

STATE HIGHWAY BOND INDEBTEDNESS ACCOUNT

$72,000,000 Bonds Sold in 1951, 1952 and 1953

Calendar Year	Principal Payment	Interest Payment	Total Payment	Bonds Outstanding at End of Year
1951	$	$	$	$15,000,000.00
1952	750,000.00	318,750.00	1,068,750.00	29,250,000.00
1953	1,500,000.00	502,812.50	2,002,812.50	69,750,000.00
1954	4,000,000.00	1,220,937.50	5,220,937.50	65,750,000.00
1955	4,000,000.00	1,165,312.50	5,165,312.50	61,750,000.00
1956	4,000,000.00	1,102,812.50	5,102,812.50	57,750,000.00
1957	4,000,000.00	1,040,312.50	5,040,312.50	53,750,000.00
1958	4,000,000.00	972,812.50	4,972,812.50	49,750,000.00
1959	4,000,000.00	904,375.00	4,904,375.00	45,750,000.00
1960	4,000,000.00	835,000.00	4,835,000.00	41,750,000.00
1961	5,000,000.00	763,750.00	5,763,750.00	36,750,000.00
1962	5,000,000.00	672,500.00	5,672,500.00	31,750,000.00
1963	5,000,000.00	581,250.00	5,581,250.00	26,750,000.00
1964	5,000,000.00	482,500.00	5,482,500.00	21,750,000.00
1965	5,000,000.00	383,750.00	5,383,750.00	16,750,000.00
1966	5,000,000.00	285,000.00	5,285,000.00	11,750,000.00
1967	2,000,000.00	186,250.00	2,186,250.00	9,750,000.00
1968	2,000,000.00	154,375.00	2,154,375.00	7,750,000.00
1969	2,000,000.00	121,875.00	2,121,875.00	5,750,000.00
1970	2,000,000.00	89,375.00	2,089,375.00	3,750,000.00
1971	2,000,000.00	55,937.50	2,055,937.50	1,750,000.00
1972	1,250,000.00	21,562.50	1,271,562.50	500,000.00
1973	500,000.00	5,000.00	505,000.00	
Totals	$72,000,000.00	$11,866,250.00	$83,866,250.00	

DETAIL OF BOND SALES

Date of Issue	Par Value	Term in Years	Effective Interest Rate	Total Interest
October 1, 1951	$15,000,000.00	20	1.6152000%	$ 2,295,000.00
March 1, 1952	15,000,000.00	20	1.6347610%	2,396,250.00
March 1, 1953	10,000,000.00	20	1.9928095%	1,965,000.00
September 1, 1953	32,000,000.00	13	2.3202280%	5,210,000.00
	$72,000,000.00			$11,866,250.00

BOND SALE AUTHORITY AND BONDS OUTSTANDING

December 31, 1954

Authority	Date of Issue	Sold (Par Value)	Matured	Balance Outstanding
ORS 366.645-670	October 1, 1951	$15,000,000.00	$ 2,250,000.00	$12,750,000.00
ORS 366.645-670	March 1, 1952	15,000,000.00	1,500,000.00	13,500,000.00
ORS 366.645-670	March 1, 1953	10,000,000.00	500,000.00	9,500,000.00
ORS 366.688-697	September 1, 1953	32,000,000.00	2,000,000.00	30,000,000.00
Total sold		$72,000,000.00		
Total matured and paid			$ 6,250,000.00	
Total outstanding				$65,750,000.00

Table No. 26

APPORTIONMENT OF MOTOR VEHICLE REVENUES TO CITIES—1944 TO 1954, INCLUSIVE

Beginning with the calendar year 1944, the cities have annually received a portion of the state highway income from motor vehicle fees, motor transportation fees, gasoline tax, and fines for traffic law violations. During the years 1944 to 1947, the cities received five (5) per cent of the state highway income, and beginning with the year 1948 they have received ten (10) per cent of the income. The apportionments are made semi-annually, on February first and August first, and are distributed in proportion to population, with the provision that a city of over 100,000 population receives an apportionment computed on two-thirds of its population. Payments are made only to incorporated cities having functioning city governments.

City	County	Total 1944 to 1952	1953	1954	Total 1944 to 1954
Adams	Umatilla	$ 5,650.35	$ 955.31	$ 979.99	$ 7,585.65
Albany	Linn	246,125.74	62,746.45	64,367.36	373,239.55
Amity	Yamhill	21,547.73	4,168.63	4,276.31	29,992.67
Antelope	Wasco	2,762.54	372.20	381.81	3,516.55
Arlington	Gilliam	21,877.17	4,255.47	4,365.40	30,498.04
Ashland	Jackson	197,907.21	48,007.39	49,247.56	295,162.16
Astoria	Clatsop	380,269.90	76,492.98	78,469.00	535,231.88
Athena	Umatilla	24,473.74	4,652.48	4,772.67	33,898.89
Aumsville	Marion	8,396.28	1,743.13	1,788.16	11,927.57
Aurora	Marion	8,318.14	1,501.20	1,539.98	11,359.32
Baker	Baker	323,695.97	58,751.52	60,269.23	442,716.72
Bandon	Coos	37,271.04	7,760.34	7,960.81	52,992.19
Banks	Washington	11,112.19	2,332.44	2,392.69	15,837.32
Barlow	Clackamas	2,058.81	465.25	477.27	3,001.33
Bay City	Tillamook	20,455.52	4,720.72	4,842.66	30,018.90
Beaverton	Washington	61,939.00	15,582.71	17,981.34	95,503.05
Bend	Deschutes	361,487.24	70,773.52	72,601.80	504,862.56
Boardman	Morrow	3,906.15	744.40	763.63	5,414.18
Bonanza	Klamath	8,341.17	1,606.66	1,648.16	11,595.99
Brookings	Curry	8,915.30	9,460.04	11,834.34	30,209.68
Brownsville	Linn	35,122.39	7,288.88	7,477.18	49,888.45
Burns	Harney	94,480.31	19,186.82	19,682.48	133,349.61
Butte Falls	Jackson	12,086.06	2,307.63	2,367.24	16,760.93
Canby	Clackamas	46,979.48	10,365.72	10,633.50	67,978.70
Canyon City	Grant	13,007.10	3,151.28	3,232.69	19,391.07
Canyonville	Douglas	24,264.25	5,341.04	6,270.62	35,875.91
Carlton	Yamhill	34,324.37	6,705.77	6,879.01	47,909.15
Cascade Locks	Hood River	24,605.27	4,547.02	4,664.48	33,816.77
Cave Junction	Josephine	7,735.42	1,755.54	1,800.89	11,291.85
Central Point	Jackson	45,016.80	10,340.91	10,608.04	65,965.75
Chiloquin	Klamath	24,701.64	4,143.81	4,250.86	33,096.31
Clatskanie	Columbia	29,152.39	5,589.18	5,733.56	40,475.13
Coburg	Lane	20,932.85	4,298.89	4,409.94	29,641.68
Columbia City	Columbia	12,176.82	2,512.34	2,577.24	17,266.40
Condon	Gilliam	31,861.34	6,004.80	6,159.92	44,026.06
Coos Bay	Coos	191,091.28	38,603.18	39,600.40	269,294.86
Coquille	Coos	118,320.02	24,589.91	25,225.13	168,135.06
Cornelius	Washington	29,032.68	6,190.90	6,350.83	41,574.41
Corvallis	Benton	379,142.82	100,537.00	103,134.14	582,813.96
Cottage Grove	Lane	101,001.49	21,934.89	22,501.53	145,437.91
Cove	Union	10,627.52	1,749.33	1,794.52	14,171.37
Creswell	Lane	21,167.25	4,106.59	4,212.67	29,486.51
Culver	Jefferson	6,851.08	1,867.19	1,915.43	10,633.70
Dallas	Polk	137,194.01	29,732.45	30,500.52	197,426.98
Dayton	Yamhill	22,497.49	4,460.18	4,575.40	31,533.07
Dayville	Grant	6,415.33	1,774.14	1,819.98	10,009.45

Table No. 26—Continued

City	County	Total 1944 to 1952	1953	1954	Total 1944 to 1954
Delake	Lincoln	11,108.05	3,994.93	4,098.13	19,201.11
Detroit	Marion	.....	1,699.71	1,743.61	3,443.32
Donald	Marion	6,332.33	1,160.02	1,189.99	8,682.34
Drain	Douglas	33,586.99	7,133.80	7,318.08	48,038.87
Draperville	Linn	638.65	.....	.....	638.65
Dufur	Wasco	13,864.29	2,617.80	2,685.42	19,167.51
Dundee	Yamhill	8,350.13	1,910.62	1,959.97	12,220.72
Eagle Point	Jackson	16,446.25	3,765.41	3,862.68	24,074.34
Eastside	Coos	29,089.18	5,520.95	5,663.57	40,273.70
Echo	Umatilla	15,212.52	2,834.91	2,908.15	20,955.58
Elgin	Union	39,987.01	7,586.64	7,782.63	55,356.28
Elkton	Douglas	4,973.51	1,246.86	1,279.07	7,499.44
Empire	Coos	41,839.93	14,025.68	14,387.99	70,253.60
Enterprise	Wallowa	59,980.30	10,657.28	10,932.58	81,570.16
Estacada	Clackamas	25,950.87	5,893.14	6,045.38	37,889.39
Eugene	Lane	890,686.12	222,568.44	228,318.00	1,341,572.56
Fairview	Multnomah	14,022.13	2,717.05	2,787.24	19,526.42
Falls City	Polk	26,235.94	5,291.42	5,428.11	36,955.47
Florence	Lane	26,683.82	9,689.56	9,939.87	46,313.25
Forest Grove	Washington	106,202.32	26,940.96	29,430.83	162,574.11
Fossil	Wheeler	20,702.14	4,001.13	4,104.50	28,807.77
Garibaldi	Tillamook	31,205.95	7,747.93	7,948.08	46,901.96
Gaston	Washington	11,856.91	2,282.82	2,341.79	16,481.52
Gates	Marion	6,143.09	2,617.80	2,685.42	11,446.31
Gearhart	Clatsop	18,758.36	3,523.47	3,614.50	25,896.33
Gervais	Marion	13,760.99	2,834.91	2,908.15	19,504.05
Gladstone	Clackamas	71,152.22	15,098.85	15,488.89	101,739.96
Glendale	Douglas	22,801.00	5,403.08	5,542.66	33,746.74
Gold Beach	Curry	19,640.89	5,770.70	6,472.21	31,883.80
Gold Hill	Jackson	21,113.97	3,839.84	3,939.04	28,892.85
Granite	Grant	2,424.02	248.13	254.54	2,926.69
Grants Pass	Josephine	231,267.51	50,346.04	51,646.62	333,260.17
Grass Valley	Sherman	6,938.59	1,209.65	1,240.89	9,389.13
Gresham	Multnomah	95,609.87	18,913.88	19,402.48	133,926.23
Haines	Baker	12,371.19	1,991.26	2,042.70	16,405.15
Halfway	Baker	13,161.14	1,935.43	1,985.43	17,082.00
Halsey	Linn	11,497.27	2,406.89	2,469.06	16,373.22
Hammond	Clatsop	15,680.37	3,238.13	3,321.78	22,240.28
Harrisburg	Linn	28,164.15	5,347.25	5,485.39	38,996.79
Helix	Umatilla	5,927.44	1,129.00	1,158.17	8,214.61
Heppner	Morrow	50,712.33	10,223.05	10,487.14	71,422.52
Hermiston	Umatilla	88,467.06	23,597.38	24,206.97	136,271.41
Hillsboro	Washington	145,232.67	31,897.40	32,721.40	209,851.47
Hines	Harney	26,077.70	5,694.64	5,841.75	37,614.09
Hood River	Hood River	118,023.25	22,958.44	23,551.52	164,533.21
Hubbard	Marion	16,475.14	3,058.23	3,137.23	22,670.60
Huntington	Baker	28,957.59	4,547.02	4,664.48	38,169.09
Idanha	Marion	6,434.77	2,741.86	2,812.69	11,989.32
Imbler	Union	5,903.87	924.29	948.17	7,776.33
Independence	Polk	59,132.57	12,325.97	12,644.38	84,102.92
Ione	Morrow	9,021.42	1,625.26	1,869.42	12,516.10
Island City	Union	5,662.44	856.05	878.17	7,396.66
Jacksonville	Jackson	35,861.84	7,400.54	7,591.72	50,854.10
Jefferson	Marion	20,967.04	3,945.31	4,047.22	28,959.57
John Day	Grant	39,271.30	9,906.68	10,162.60	59,340.58
Jordan Valley	Malheur	9,005.36	1,463.98	1,501.80	11,971.14
Joseph	Wallowa	21,301.47	4,131.40	4,238.13	29,671.00
Junction City	Lane	48,507.54	9,149.88	9,386.24	67,043.66
Juntura	Malheur	4,619.18	663.75	680.90	5,963.83
Klamath Falls	Klamath	561,916.56	98,477.49	101,021.44	761,415.49
Lafayette	Yamhill	20,070.99	4,106.59	4,212.67	28,390.25
LaGrande	Union	277,384.89	53,565.55	54,949.30	385,899.74
Lakeview	Lake	89,158.74	17,561.56	18,015.23	124,735.53

Table No. 26—Continued

City	County	Total 1944 to 1952	1953	1954	Total 1944 to 1954
Lebanon	Linn	130,021.71	36,432.02	37,373.16	203,826.89
Lexington	Morrow	7,852.70	1,470.18	1,508.16	10,831.04
Lonerock	Gilliam	1,496.11	235.72	241.81	1,973.64
Long Creek	Grant	8,760.94	1,786.55	1,832.70	12,380.19
Lostine	Wallowa	6,743.57	1,104.19	1,326.34	9,174.10
Madras	Jefferson	31,055.40	7,803.76	8,005.35	46,864.51
Malin	Klamath	19,138.34	3,672.36	3,767.23	26,577.93
Manzanita	Tillamook	7,994.79	2,293.52	2,157.25	12,445.56
Maupin	Wasco	9,721.50	1,935.43	1,985.43	13,642.36
McMinnville	Yamhill	161,291.37	41,158.94	42,222.19	244,672.50
Medford	Jackson	457,753.53	107,348.22	110,121.32	675,223.07
Merrill	Klamath	24,474.05	5,179.76	5,313.57	34,967.38
Metolius	Jefferson	2,037.49	973.92	999.07	4,010.48
Mill City	Linn	41,081.87	11,116.33	11,403.49	63,601.69
Milton-Freewater	Umatilla	109,663.60	23,888.94	24,506.05	158,058.59
Milwaukie	Clackamas	169,791.38	32,585.97	33,427.76	235,805.11
Mitchell	Wheeler	9,763.10	2,574.37	2,640.87	14,978.34
Molalla	Clackamas	44,713.93	9,286.35	9,526.24	63,526.52
Monmouth	Polk	46,764.36	12,133.67	12,447.11	71,345.14
Monroe	Benton	11,326.04	2,245.60	2,303.61	15,875.25
Monument	Grant	4,830.89	1,414.35	1,450.89	7,696.13
Moro	Sherman	11,234.28	2,226.99	2,284.52	15,745.79
Mosier	Wasco	7,926.84	1,606.66	1,648.16	11,181.66
Mt. Angel	Marion	43,872.45	8,157.35	8,368.08	60,397.88
Mt. Vernon	Grant	10,718.39	2,797.69	2,869.96	16,386.04
Myrtle Creek	Douglas	35,652.77	11,048.09	13,198.59	59,899.45
Myrtle Point	Coos	58,478.53	12,611.32	12,937.11	84,026.96
Nehalem	Tillamook	9,334.04	1,674.90	1,718.16	12,727.10
Newberg	Yamhill	113,419.40	24,478.24	25,110.59	163,008.23
Newport	Lincoln	83,577.03	20,104.92	20,624.29	124,306.24
North Bend	Coos	167,410.96	37,833.96	38,811.32	244,056.24
North Powder	Union	13,277.57	2,499.94	2,564.52	18,342.03
Nyssa	Malheur	81,577.70	15,663.35	16,067.98	113,309.03
Oakland	Douglas	22,188.76	5,142.54	5,275.39	32,606.69
Oakridge	Lane	37,761.84	9,689.56	9,939.88	57,391.28
Oceanlake	Lincoln	19,245.14	4,342.32	4,454.49	28,041.95
Ontario	Malheur	132,763.41	27,697.77	28,413.27	188,874.45
Oregon City	Clackamas	228,895.07	47,653.80	48,884.83	325,433.70
Oswego	Clackamas	92,364.23	20,570.16	21,101.55	134,035.94
Paisley	Lake	7,883.34	1,327.51	1,361.80	10,572.65
Pendleton	Umatilla	342,898.14	76,244.84	78,214.46	497,357.44
Philomath	Benton	34,887.16	7,996.06	8,202.62	51,085.84
Phoenix	Jackson	22,488.65	4,627.67	4,747.21	31,863.53
Pilot Rock	Umatilla	20,366.79	5,254.20	7,024.38	32,645.37
Portland	Multnomah	7,539,924.49	1,545,150.65	1,585,066.18	10,670,141.32
Port Orford	Curry	25,098.73	4,181.03	5,672.91	34,952.67
Powers	Coos	25,717.44	5,551.96	5,695.39	36,964.79
Prairie City	Grant	25,349.41	5,099.12	5,230.84	35,679.37
Prescott	Columbia	3,270.81	738.19	757.26	4,766.26
Prineville	Crook	91,351.16	20,576.37	21,107.92	133,035.45
Rainier	Columbia	41,983.39	7,971.25	8,177.16	58,131.80
Redmond	Deschutes	82,823.15	18,336.97	18,810.67	119,970.79
Reedsport	Douglas	70,254.94	14,193.17	14,559.82	99,007.93
Richland	Baker	8,377.76	1,364.73	1,399.99	11,142.48
Riddle	Douglas	18,855.36	3,932.89	4,034.49	26,822.74
Rockaway	Tillamook	32,192.06	6,823.64	6,999.91	46,015.61
Rogue River	Jackson	17,303.80	3,659.95	3,754.49	24,718.24
Roseburg	Douglas	208,691.21	52,045.74	68,591.81	329,328.76
St. Helens	Columbia	153,193.04	29,223.78	29,978.70	212,395.52
St. Paul	Marion	6,793.36	1,401.94	1,705.44	9,900.74
Salem	Marion	1,250,811.98	267,610.65	277,094.65	1,795,517.28
Sandy	Clackamas	26,182.17	6,221.92	6,382.64	38,786.73

Table No. 26—Continued

City	County	Total 1944 to 1952	1953	1954	Total 1944 to 1954
Scappoose	Columbia	18,669.50	4,087.98	4,193.58	26,951.06
Scio	Linn	14,665.23	2,779.08	2,850.87	20,295.18
Scotts Mills	Marion	7,726.68	1,346.12	1,380.89	10,453.69
Seaside	Clatsop	111,219.96	24,106.04	24,728.77	160,054.77
Shaniko	Wasco	1,961.74	378.40	388.18	2,728.32
Sheridan	Yamhill	56,078.97	11,922.75	12,230.75	80,232.47
Sherwood	Washington	19,239.06	3,566.90	3,659.04	26,465.00
Siletz	Lincoln	16,292.40	3,535.88	3,627.22	23,455.50
Silver Lake	Lake	133.22	.....	.....	133.22
Silverton	Marion	103,339.68	19,515.61	20,019.75	142,875.04
Sisters	Deschutes	20,581.61	4,484.99	4,600.85	29,667.45
Sodaville	Linn	5,500.41	973.92	999.07	7,473.40
Springfield	Lane	211,467.15	67,039.13	68,770.94	347,277.22
Stanfield	Umatilla	21,832.04	5,241.80	5,377.20	32,451.04
Stayton	Marion	46,866.65	9,348.38	9,589.87	65,804.90
Sublimity	Marion	10,663.31	2,276.61	2,335.43	15,275.35
Summerville	Union	2,681.18	452.84	464.54	3,598.56
Sumpter	Baker	11,337.76	905.69	929.08	13,172.53
Sutherlin	Douglas	53,378.69	13,833.37	14,190.73	81,402.79
Sweet Home	Linn	87,859.69	22,350.51	22,927.89	133,138.09
Taft	Lincoln	8,035.63	2,791.49	2,863.61	13,690.73
Talent	Jackson	21,392.80	4,584.24	4,702.67	30,679.71
The Dalles	Wasco	233,798.25	49,210.84	55,980.58	338,989.67
Tillamook	Tillamook	105,524.06	22,859.18	23,449.70	151,832.94
Toledo	Lincoln	79,296.20	14,410.28	14,782.54	108,489.02
Troutdale	Multnomah	13,358.12	3,188.50	3,270.87	19,817.49
Tualatin	Washington	8,158.22	1,538.42	1,578.17	11,274.81
Turner	Marion	18,881.19	3,784.02	3,881.77	26,546.98
Umatilla	Umatilla	21,585.83	5,477.52	5,619.02	32,682.37
Union	Union	47,168.38	8,107.72	8,317.17	63,593.27
Vale	Malheur	47,219.91	9,416.62	9,659.88	66,296.41
Vernonia	Columbia	49,302.98	9,435.23	9,678.97	68,417.18
Waldport	Lincoln	22,384.31	4,274.08	4,384.49	31,042.88
Wallowa	Wallowa	33,306.18	6,544.49	6,713.55	46,564.22
Warrenton	Clatsop	63,565.36	11,761.47	12,065.30	87,392.13
Wasco	Sherman	10,454.02	1,892.00	1,940.88	14,286.90
Waterloo	Linn	2,064.92	1,116.60	1,145.44	4,326.96
West Linn	Clackamas	83,641.88	18,268.75	18,740.67	120,651.30
Weston	Umatilla	21,852.64	4,212.04	4,320.85	30,385.53
Wheeler	Tillamook	9,290.59	1,805.16	1,851.80	12,947.55
Willamina	Yamhill	32,191.09	6,711.98	6,885.37	45,788.44
Winston	Douglas	.....	.....	12,472.57	12,472.57
Woodburn	Marion	77,579.93	15,388.31	16,411.61	109,379.85
Wood Village	Multnomah	10,096.80	7,456.38	7,648.99	25,202.17
Yamhill	Yamhill	15,811.35	3,343.58	3,429.96	22,584.89
Yoncalla	Douglas	15,613.22	3,883.27	3,983.58	23,480.07
Total Amounts Disbursed		$21,361,573.99	$4,585,724.03	$4,753,170.23	$30,700,468.25
Amounts Withheld *		1,375,000.00	250,000.00	250,000.00	1,875,000.00
Total Apportionment		$22,736,573.99	$4,835,724.03	$5,003,170.23	$32,575,468.25

* The 1947 law provided for the withholding of $250,000 annually from the cities' share of highway income to be expended by the State Highway Commission upon streets not a part of the state highway system which are receiving excessive wear through increased or unusual use.

Table No. 27

CITY ALLOTMENT PROJECT EXPENDITURES

Years 1948 to 1953, Inclusive

In this table are given the amounts of city allotment funds expended for projects upon city streets not a part of the state highway system which are receiving excessive wear through increased or unusual use. Beginning with 1948 an amount of $250,000 has been withheld annually from the cities share of motor vehicle revenues for financing these projects.

City	City Allotment Funds	Amounts Contributed By Cities	Total Amounts Expended
Amity	$ 8,834.18	$ 11,800.00	$ 20,634.18
Bandon	917.26		917.26
Bay City	15,003.00	17.63	15,020.63
Beaverton	16,641.85		16,641.85
Brookings	447.17		447.17
Brownsville	39,928.72	15,504.85	55,433.57
Burns	21,513.88	3,177.00	24,690.88
Canby	17,246.18	3,000.00	20,246.18
Canyonville	10,717.26		10,717.26
Carlton	14,719.72		14,719.72
Cave Junction	4,980.09		4,980.09
Central Point	11,992.40		11,992.40
Chiloquin	3,572.63		3,572.63
Coquille	13,994.47		13,994.47
Condon	43.46		43.46
Cornelius	11,968.13		11,968.13
Dallas	28,340.47	3,000.00	31,340.47
Drain	8,591.96		8,591.96
Dufur	13,670.48		13,670.48
Eagle Point	14,361.58		14,361.58
Elgin	15,000.00	2,236.75	17,236.75
Empire	16,792.82		16,792.82
Enterprise	21,921.90		21,921.90
Florence	9,392.05		9,392.05
Forest Grove	12,525.14		12,525.14
Garibaldi	3,355.08	255.30	3,610.38
Gladstone	15,006.67		15,006.67
Glendale	10,292.82		10,292.82
Gold Beach	13,102.00	15,991.24	29,093.24
Gold Hill	14,391.93		14,391.93
Gresham	18,739.39	6,172.56	24,911.95
Halsey	12,781.69		12,781.69
Harrisburg	13,636.95	4,700.00	18,336.95
Helix	15,046.71	1,324.24	16,370.95
Heppner	17,605.82		17,605.82
Hillsboro	14,996.43	1,204.67	16,201.10
Hood River	4,586.83		4,586.83
Hubbard	4,056.24		4,056.24
Independence	26,743.29	3,081.27	29,824.56
Ione	19,227.27		19,227.27
Island City	11,891.04		11,891.04
Joseph	12,874.87		12,874.87
Junction City	15,000.00	936.51	15,936.51
Lafayette	15,000.00	1,886.14	16,886.14
Lakeview	14,701.61		14,701.61
Lebanon	14,999.47	25,163.03	40,162.50
Long Creek	11,557.38		11,557.38
Lostine	14,742.68		14,742.68
Madras	11,862.57		11,862.57
Mill City	11,345.07		11,345.07
Milton-Freewater	36,856.80	8,750.00	45,606.80

Table No. 27—Continued

City	City Allotment Funds	Amounts Contributed By Cities	Total Amounts Expended
Molalla	600.55		600.55
Monument	350.83		350.83
Mosier	3,026.22		3,026.22
Myrtle Creek	13,711.79	3,000.00	16,711.79
Myrtle Point	38,612.65		38,612.65
Newport	22,592.77		22,592.77
North Powder	7,908.77		7,908.77
Nyssa	12,555.68		12,555.68
Oakland	24,252.35		24,252.35
Oakridge	28,428.85		28,428.85
Ontario	18,971.77		18,971.77
Paisley	3,872.55		3,872.55
Philomath	8,606.74		8,606.74
Phoenix	23,927.75	3,000.00	26,927.75
Powers	7,460.87		7,460.87
Prairie City	27,452.14		27,452.14
Prescott	14,283.68		14,283.68
Redmond	18,926.65		18,926.65
Reedsport	16,797.43		16,797.43
Riddle	25,774.04		25,774.04
Rogue River	23,431.96		23,431.96
Sandy	15,007.04	42.52	15,049.56
Scappoose	8,099.65		8,099.65
Scio	10,665.25		10,665.25
Seaside	15,024.24	20,438.50	35,462.74
Sheridan	14,945.24		14,945.24
Sherwood	16,746.99		16,746.99
Siletz	16,307.03		16,307.03
Silverton	22,197.43	4,988.56	27,185.99
St. Helens	15,000.00	8,054.99	23,054.99
Stanfield	14,455.99	7,141.75	21,597.74
Stayton	2,105.38		2,105.38
Sweet Home	46,750.22	10,274.11	57,024.33
Talent	11,225.86		11,225.86
Tillamook	26,118.59	39,885.81	66,004.40
Toledo	12,052.50	4,800.00	16,852.50
Turner	11,686.89		11,686.89
Umatilla	9,536.93		9,536.93
Union	11,708.60		11,708.60
Vale	9,542.89		9,542.89
Waldport	17,536.63		17,536.63
Wallowa	15,001.38	1,294.22	16,295.60
West Salem	18,940.69	16,054.47	34,995.16
Willamina	21,898.88	4,284.44	26,183.32
Yamhill	14,363.79		14,363.79
Yoncalla	23,544.13	1,702.21	25,246.34
Totals	$1,449,525.67	$ 233,162.77	$1,682,688.44

SUMMARY OF EXPENDITURES BY YEARS

City Allotment Funds Only

Year	Receipts from Annual Allotments	Expenditures: For Construction	Expenditures: For Surveys	Expenditures: Total	Additional Funds Contributed By Cities	Total City Allotment Project Expenditures
1948	$ 250,000.00	$ 217,434.24	$	$ 217,434.24	$	$ 217,434.24
1949	375,000.00	227,994.31	6,124.98	234,119.29	58,055.11	292,174.40
1950	250,000.00	178,186.06	7,930.51	186,116.57	73,633.17	259,749.74
1951	250,000.00	296,436.21	8,248.31	304,684.52	43,205.47	347,889.99
1952	250,000.00	240,442.15	7,621.18	248,063.33	43,998.25	292,061.58
1953	250,000.00	250,770.96	8,336.76	259,107.72	14,270.77	273,378.49
Totals	$1,625,000.00	$1,411,263.93	$ 38,261.74	$1,449,525.67	$ 233,162.77	$1,682,688.44

Table No. 28

APPORTIONMENT OF MOTOR VEHICLE FEES TO COUNTIES
1920 to 1953, Inclusive

Prior to 1917, the total net revenues from motor vehicle license fees were reverted to counties; from 1917 to 1919, inclusive, the entire net fees were reverted to the state highway fund; from 1920 to January 1, 1930, inclusive, one-quarter of the net fees were apportioned to the counties and three-quarters to the state highway fund; and from January 1, 1930 to June 30, 1933, one-third of the net fees were apportioned to the counties and two-thirds to the state highway fund. The net revenues from motor transportation fees, from the beginning of the act authorizing the collection of such fees in 1927, to June 30, 1933, were apportioned one-quarter to the counties and three-quarters to state highway fund. Subsequent to June 30, 1933, the entire net revenues from both sources were deposited into the state highway fund. During the four-year period from 1933 to 1936, the counties received $1,600,000 yearly. During the ten-year period from 1937 to 1946 the yearly apportionment was increased to 15.7 per cent of the total state highway income, but to be not less than $2,000,000. Beginning with the year 1947, the yearly apportionment was again increased to 19 per cent of the total state highway income from motor vehicle fees. This table gives total apportionments to the end of the calendar year 1953.

County	Total Apportionment 1920 to 1951	Apportionment Calendar Year 1952	Apportionment Calendar Year 1953	Total Apportionment 1920 to 1953
Baker	$ 1,071,219.60	$ 95,747.80	$ 100,102.67	$ 1,267,070.07
Benton	1,485,315.65	158,573.04	158,962.89	1,802,851.58
Clackamas	3,932,151.39	450,565.37	467,531.18	4,850,247.94
Clatsop	1,615,390.48	160,421.23	169,830.95	1,945,642.66
Columbia	1,310,202.28	127,972.40	131,831.03	1,570,005.71
Coos	2,165,664.35	268,095.84	296,666.51	2,730,426.70
Crook	377,634.67	58,259.07	61,958.42	497,852.16
Curry	298,128.22	46,312.48	58,456.31	402,897.01
Deschutes	1,293,380.99	130,650.51	135,150.55	1,562,182.05
Douglas	2,198,383.78	348,841.25	387,635.72	2,934,860.75
Gilliam	249,154.64	22,124.25	23,659.91	294,938.80
Grant	437,573.52	54,600.95	57,557.70	549,732.17
Harney	372,268.45	40,004.16	43,180.57	455,453.18
Hood River	845,279.51	78,547.51	84,689.73	1,008,516.75
Jackson	3,196,430.53	382,029.83	406,306.75	3,984,767.11
Jefferson	199,235.53	35,821.82	39,800.15	274,857.50
Josephine	1,273,673.48	173,999.92	187,684.66	1,635,358.06
Klamath	2,736,604.18	263,302.51	274,152.59	3,274,059.28
Lake	448,109.05	45,483.31	50,463.51	544,055.87
Lane	5,345,256.99	755,061.19	801,009.51	6,901,327.69
Lincoln	870,092.64	123,071.04	130,493.00	1,123,656.68
Linn	2,520,562.10	322,516.51	341,214.84	3,184,293.45
Malheur	1,100,175.74	128,564.85	139,365.07	1,368,105.66
Marion	5,252,307.49	566,168.40	586,840.93	6,405,316.82
Morrow	364,719.90	36,262.31	39,183.61	440,165.82
Multnomah	26,715,529.52	2,521,310.78	2,611,582.58	31,848,422.88
Polk	1,297,093.01	138,421.49	141,141.54	1,576,656.04
Sherman	254,091.65	19,601.85	21,451.46	295,144.96
Tillamook	1,020,797.37	119,288.15	124,888.32	1,264,973.84
Umatilla	2,321,646.34	275,835.17	315,952.16	2,913,433.67
Union	1,214,707.17	107,950.88	115,548.71	1,438,206.76
Wallowa	465,878.12	46,805.01	51,213.40	563,896.53
Wasco	1,010,990.34	98,858.64	106,858.74	1,216,707.72
Washington	2,901,222.85	345,467.34	363,171.36	3,609,861.55
Wheeler	181,065.11	19,524.87	20,686.08	221,276.06
Yamhill	1,983,578.88	210,214.53	215,895.79	2,409,689.20
Totals	$80,328,515.52	$ 8,776,276.26	$ 9,262,118.90	$98,366,910.68

Table No. 29

MILEAGES OF PRIMARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
1.	Pacific	223.08	50.42	135.10	37.56				
1E.	Pacific, East	111.11	43.20	59.00	8.91				
1W.	Pacific, West	115.06	45.56	49.19	20.31				
2.	Columbia River	304.79	25.44	155.50	112.12	11.73			
3.	Oswego	11.55	7.07	4.48					
4.	The Dalles-California	291.99	2.02	80.87	58.84	150.26			
5.	John Day	281.01		18.18	39.53	223.30			
6.	Old Oregon Trail	242.69	2.74	47.26	178.17	14.52			
7.	Central Oregon	258.59	0.04	83.06	36.87	138.62			
8.	Oregon-Washington	35.31		7.75	27.56				
9.	Oregon Coast	377.35	13.58	76.31	127.97	157.31			2.18
10.	Wallowa Lake	71.28	0.22	4.19	12.32	54.55			
11.	Enterprise-Lewiston	46.67				23.14	23.53		
12.	Baker-Homestead	80.53		0.33		48.41	3.90		27.89
13.	Baker-Unity	45.98	0.01	9.15		36.82			
14.	Crooked River	42.54				0.89		41.65	
15.	McKenzie	112.70	0.74	1.12	33.25	77.59			
16.	Santiam	100.82		30.62	17.89	52.31			
17.	McKenzie-Bend	18.54	0.03	5.00		13.51			
18.	Willamette	85.57		12.73	49.43	23.41			
19.	Fremont	158.17		0.60	50.63	106.94			
20.	Klamath Falls-Lakeview	95.81	2.25	3.28	42.37	47.91			
21.	Green Springs	59.08		5.69	33.86	19.53			
22.	Crater Lake	86.70	15.02	19.05	24.97	27.66			
23.	Dairy-Bonanza	6.97				6.97			
24.	Burns-Crane	28.91				28.91			
25.	Redwood	42.51	0.11	13.20	13.06	16.14			
26.	Mt. Hood	104.70	12.07	15.62	34.29	42.72			
27.	Alsea	59.11		18.74	3.19	37.18			
28.	Pendleton-John Day	122.29		1.62	31.35	79.35	3.20		6.77
29.	Tualatin Valley	42.28	20.18	22.10					
30.	Willamina-Salem	26.80	0.38	13.27	8.75				4.40
31.	Albany-Corvallis	11.12	10.26	0.86					
32.	Three Rivers	24.74			4.41	20.33			
33.	Corvallis-Newport	55.87	0.51	6.10	20.60	28.66			
34.	Siuslaw	67.45		2.54	13.44	51.47			
35.	Coos Bay-Roseburg	61.81	0.11	11.88	9.01	40.81			
36.	Pendleton-Cold Springs	30.88			5.22	25.15	0.51		
37.	Wilson River	54.24	1.70	18.86	3.86	17.00			12.82
38.	Oregon Caves	19.70				19.70			
39.	Salmon River	44.80	4.91	15.12	24.77				
40.	Beaverton-Hillsdale	6.72	3.68	3.04					
41.	Ochoco	98.25	0.14	9.62	1.63	86.86			
42.	Sherman	68.85			15.86	52.99			
43.	Monmouth-Independence	2.35		2.35					
44.	Wapinitia	26.20		1.00	11.29	13.91			
45.	Umpqua	50.09	0.59		33.52	15.98			
46.	Necanicum	22.09			9.22	12.87			
47.	Sunset	74.83	3.77	46.82	20.56	3.68			
48.	John Day-Burns	67.42			18.63	48.79			
49.	Lakeview-Burns	90.10				90.10			
50.	Klamath Falls-Malin	29.03	0.22		19.96	8.85			
51.	Wilsonville-Hubbard	5.76	4.05	1.71					
52.	Heppner	84.28			0.20	84.08			
53.	Warm Springs	60.10	0.14	18.11	18.60	23.25			
54.	Umatilla-Stanfield	12.61			1.50	11.11			
55.	Halfway	11.15				11.15			
56.	Banfield Expressway	13.97		1.35					12.62
57.	Portland-Salem Expressway	51.88	0.43	20.38					31.07
	Totals	4,836.78	271.59	1,052.75	1,235.48	2,106.42	31.14	41.65	97.75

Table No. 30

MILEAGES OF PRIMARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage in County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	229.88	0.99	10.99	56.92	129.19	3.90	———	27.89
Benton	94.86	17.73	30.28	23.16	23.69	———	———	———
Clackamas	80.39	26.60	12.30	36.94	2.90	———	———	1.65
Clatsop	108.34	17.05	40.53	38.98	11.78	———	———	———
Columbia	55.96	3.82	48.51	3.63	———	———	———	———
Coos	100.13	5.20	22.69	24.62	47.62	———	———	———
Crook	84.79	———	———	1.63	45.58	———	37.58	———
Curry	89.99	0.37	11.15	12.14	66.33	———	———	———
Deschutes	202.79	0.11	68.64	46.48	83.49	———	4.07	———
Douglas	196.32	19.59	89.75	43.56	43.42	———	———	———
Gilliam	96.42	———	11.58	24.54	60.30	———	———	———
Grant	198.48	———	18.18	22.08	148.25	3.20	———	6.77
Harney	185.16	———	28.89	27.79	128.48	———	———	———
Hood River	71.73	1.06	25.36	5.49	39.82	———	———	———
Jackson	147.39	17.44	62.22	49.18	18.55	———	———	———
Jefferson	69.98	———	0.29	21.96	47.73	———	———	———
Josephine	93.76	5.71	23.87	28.34	35.84	———	———	———
Klamath	310.91	4.45	46.82	118.29	141.35	———	———	———
Lake	244.71	———	15.58	50.63	178.50	———	———	———
Lane	285.95	27.24	40.19	85.00	133.52	———	———	———
Lincoln	134.38	1.29	13.61	61.45	58.03	———	———	———
Linn	117.24	11.47	46.23	12.91	46.63	———	———	———
Malheur	182.39	1.60	31.37	59.65	89.77	———	———	———
Marion	77.24	18.77	36.01	———	———	———	———	22.46
Morrow	105.11	———	16.21	14.45	74.45	———	———	———
Multnomah	134.98	31.30	57.69	26.41	———	———	———	19.58
Polk	68.53	5.90	29.96	27.16	1.11	———	———	4.40
Sherman	63.92	0.04	———	30.69	33.19	———	———	———
Tillamook	130.51	4.05	31.16	51.69	41.43	———	———	2.18
Umatilla	245.89	0.16	11.31	145.64	88.27	0.51	———	———
Union	77.94	0.20	27.24	24.51	25.99	———	———	———
Wallowa	84.95	0.02	1.98	7.72	51.70	23.53	———	———
Wasco	185.84	0.14	34.07	44.68	106.95	———	———	———
Washington	107.35	15.15	76.55	2.83	———	———	———	12.82
Wheeler	99.59	0.14	9.62	———	89.83	———	———	———
Yamhill	72.98	34.00	21.92	4.33	12.73	———	———	———
Totals	4,836.78	271.59	1,052.75	1,235.48	2,106.42	31.14	41.65	97.75

Table No. 31

MILEAGES OF SECONDARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage in County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	70.73	———	———	0.60	29.42	38.31	———	2.40
Benton	28.68	0.04	0.24	6.05	16.06	6.29	———	———
Clackamas	113.44	4.33	37.40	10.45	61.11	———	———	0.15
Clatsop	49.33	13.28	7.09	0.86	22.24	———	———	5.86
Columbia	42.04	———	5.77	8.11	28.16	———	———	———
Coos	55.44	1.26	3.96	———	34.46	10.48	———	5.28
Crook	87.66	———	———	———	50.84	18.72	18.10	———
Curry	6.33	———	———	———	———	5.29	———	1.04
Deschutes	53.64	———	0.58	———	52.43	———	0.63	———
Douglas	96.31	0.08	7.03	———	68.36	20.84	———	———
Gilliam	40.69	———	———	———	19.68	21.01	———	———
Grant	40.44	———	———	———	32.87	7.57	———	———
Harney	121.08	———	———	———	32.46	16.89	21.83	49.90
Hood River	20.71	3.27	———	1.98	15.46	———	———	———
Jackson	97.40	———	26.75	———	53.88	———	0.35	16.42
Jefferson	27.94	———	———	———	27.94	———	———	———
Josephine	45.55	———	0.12	———	45.43	———	———	———
Klamath	133.54	———	0.61	16.21	90.33	8.26	———	18.13
Lake	45.89	———	7.01	———	21.18	———	6.63	11.07
Lane	141.61	2.04	37.17	8.42	23.64	61.46	———	8.88
Lincoln	44.71	———	1.91	5.55	15.07	22.18	———	———
Linn	88.58	0.24	22.05	11.31	54.98	———	———	———
Malheur	210.20	———	22.07	———	178.10	3.17	———	6.86
Marion	145.23	1.24	78.63	7.30	58.06	———	———	———
Morrow	73.90	———	———	———	63.93	9.97	———	———
Multnomah	45.49	9.56	35.43	———	0.50	———	———	———
Polk	49.20	0.06	10.42	0.42	37.85	0.45	———	———
Sherman	40.01	———	———	———	21.42	14.36	———	4.23
Tillamook	18.69	1.56	0.10	———	7.49	3.94	3.08	2.52
Umatilla	146.32	0.05	5.75	1.38	115.68	———	———	23.46
Union	123.23	———	1.31	10.55	79.96	13.90	2.21	15.30
Wallowa	36.26	———	8.22	———	6.60	21.44	———	———
Wasco	31.42	———	———	———	8.30	23.12	———	———
Washington	68.09	0.35	15.66	———	52.08	———	———	———
Wheeler	61.39	———	———	———	0.60	35.23	6.43	19.13
Yamhill	66.73	5.77	7.64	———	53.32	———	———	———
Totals	2,567.90	43.13	342.92	89.19	1,479.89	362.88	59.26	190.63

Table No. 32

MILEAGES OF SECONDARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
102.	Nehalem	85.15	10.81	24.79	8.11	41.44			
103.	Fishhawk Falls	5.86							5.86
104.	Fort Stevens	4.53	2.47	1.20	0.86				
105.	Warrenton	1.62		1.62					
110.	Mist-Clatskanie	11.89		0.13		11.76			
120.	Swift	2.94	2.09	0.85					
122.	Vancouver Avenue	0.50	0.50						
123.	Northeast Portland	10.77	4.17	6.60					
124.	Sun Dial	0.36		0.36					
125.	Crown Point	23.93		23.93					
130.	Little Nestucca	9.54					3.94	3.08	2.52
131.	Netarts	9.15	1.56	0.10		7.49			
140.	Hillsboro-Silverton	52.34	0.35	32.37		19.62			
141.	Beaverton-Aurora	20.81	0.39	2.94		17.33			0.15
142.	Farmington	9.89				9.89			
143.	Scholls	12.40				12.40			
150.	Salem-Dayton	20.10	0.03	0.35		19.72			
151.	Yamhill-Newberg	11.65	0.80	0.58		10.27			
152.	Three Mile Lane	4.56	0.19	4.37					
153.	Bellevue-Hopewell	14.89				14.89			
154.	Lafayette	5.75				5.75			
155.	Amity-Dayton	10.73	3.70			7.03			
156.	McMinnville	1.80	1.05	0.75					
160.	Cascade	44.77	6.09	21.99		16.69			
161.	Woodburn-Estacada	34.19	0.62	1.52	4.85	27.20			
162.	North Santiam	77.76		23.07	7.30	47.39			
163.	Silver Creek Falls	40.82		12.49		28.33			
164.	Jefferson	8.45	1.19	6.85	0.41				
170.	Canby-Marquam	8.02	0.22			7.80			
171.	Clackamas	24.51	0.03	22.88		1.60			
172.	Eagle Creek-Sandy	5.94	0.03			5.91			
173.	Timberline	5.60			5.60				
180.	Eddyville-Blodgett	19.29				13.60	5.69		
181.	Siletz	31.73		1.91	5.55	7.78	16.49		
182.	Otter Rock	0.45				0.45			
189.	Dallas-Rickreall	4.86		4.44	0.42				
191.	Kings Valley	28.17	0.04	2.31	6.05	19.77			
192.	Dallas-Coast	2.93				2.93			
193.	Independence	6.38	0.06	3.32		3.00			
194.	Monmouth	7.20				6.75	0.45		
200.	Territorial	45.96		14.43	3.33	10.93	17.27		
201.	Alsea-Deadwood	29.14				3.40	25.74		
210.	Corvallis-Eastside	10.30		0.39		9.91			
211.	Albany-Lyons	24.66	0.04	10.90	10.90	2.82			
212.	Halsey-Sweet Home	21.51		9.33		12.18			
213.	Mehama-Mill City	8.70				8.70			
214.	Albany Airport	1.07				1.07			
220.	Richardson-Eugene	37.03	0.07	5.98	5.09	6.74	19.15		
221.	Fox Hollow	15.50	1.13			1.64	4.23		8.50
222.	Springfield-Creswell	15.56	0.14	2.73		6.38	6.31		
223.	Junction City-Eugene	13.52	0.70	12.82					
224.	W. 7th-W. 11th St.	0.38							0.38
225.	McVay	1.21		1.21					
230.	Tiller-Trail	49.35				48.78			0.57
231.	Elkton-Sutherlin	28.09	0.08	4.75		7.37	15.89		
232.	Crater Lake-North	5.29				5.29			
233.	West Diamond Lake	23.89		8.30		15.59			
240.	Cape Arago	14.25	0.34	0.46		10.33	3.12		
241.	Coos River	19.02	0.77	2.78		2.83	7.36		5.28
242.	Powers	18.62	0.15			18.47			
243.	Empire-Coos Bay	3.55		0.72		2.83			
250.	Cape Blanco	5.54					4.50		1.04
251.	Port Orford	0.79					0.79		

Table No. 32—Continued

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement: Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
260.	Rogue River Loop	22.42		0.12		22.30			
261.	Williams	23.13				23.13			
270.	Little Butte	30.33				14.13		0.35	15.85
271.	Sams Valley	17.46		2.35		15.11			
272.	Medford-Provolt	25.42		10.77		14.65			
273.	Siskiyou	7.61		7.61					
281.	Hood River	17.28	2.43		1.98	12.87			
282.	Odell	3.43	0.84			2.59			
290.	Sherars Bridge	28.44				28.44			
291.	Shaniko-Fossil	43.45				0.60	28.27	5.67	8.91
300.	Wasco-Heppner	88.55				48.95	35.37		4.23
301.	Fulton Canyon	1.28				1.28			
320.	Lexington-Echo	39.32				39.32			
321.	Heppner-Spray	40.96				14.78	26.18		
330.	Weston-Elgin	41.39		0.10		41.29			
332.	Sunnyside-Umapine	7.25				7.25			
333.	Hermiston	17.86			0.97	16.89			
334.	Athena-Holdman	16.23		0.19		16.04			
335.	Havana-Helix	9.96	0.05			9.91			
337.	Stanfield-Pendleton	24.65				24.65			
338.	Ordnance Depot	0.41			0.41				
339.	Freewater	5.46		5.46					
340.	Medical Springs	42.53				42.53			
341.	Ukiah-Hilgard	54.87					13.90	2.21	38.76
342.	Cove	22.16				22.16			
343.	La Grande-North Powder	27.57		1.31	11.15	15.11			
350.	Little Sheep Creek	29.66		8.22			21.44		
351.	Joseph-Wallowa Lake	6.60				6.60			
360.	Madras-Prineville	26.39				26.39			
361.	Culver	11.64				11.64			
370.	O'Neil	17.66				17.66			
371.	Powell Butte	18.06				17.43		0.63	
372.	Century Drive	11.65		0.58		11.07			
373.	Cline Falls	10.54				10.54			
374.	Tumalo-Deschutes	3.85				3.85			
375.	Redmond-Bend	13.25				13.25			
380.	Paulina	56.20				19.38	18.72	18.10	
390.	Service Creek-Mitchell	24.85					13.87	0.76	10.22
401.	Beech Creek	5.35				5.35			
402.	Kimberly-Long Creek	35.09				27.52	7.57		
410.	Sumpter Valley	22.73				4.04	16.29		2.40
411.	Haines-Anthony	12.60					12.60		
413.	Halfway-Cornucopia	11.45				5.75	5.70		
414.	Pine Creek	3.72					3.72		
420.	Midland	5.87			2.14		3.73		
421.	Klamath Lake	48.47		0.61	0.07	25.13	4.53		18.13
422.	Chiloquin	9.77			9.77				
423.	Lower Klamath	7.02				7.02			
424.	Sand Creek	4.23			4.23				
425.	East Diamond Lake	14.72				14.72			
426.	Hatfield	2.51				2.51			
427.	Modoc Point	12.90				12.90			
428.	Sun Mountain	26.98				26.98			
429.	Crescent Lake	2.39				2.39			
431.	Warner	45.89		7.01		21.18		6.63	11.07
440.	Frenchglen	62.00					12.10		49.90
441.	Diamond Valley	26.62					4.79	21.83	
442.	Rome-Princeton	69.87				69.87			
450.	Nyssa-Adrian	22.46		12.07		10.39			
451.	Vale-West	10.72				10.72			
452.	Adrain-Parma	2.77				2.77			
453.	Adrian-Arena Valley	3.19				2.26	0.93		
454.	Adrian-Caldwell	5.09				2.85	2.24		
456.	I. O. N.	118.13		10.00		101.27			6.86
458.	Jordan Valley	10.43				10.43			
	Totals	2,567.90	43.13	342.92	89.19	1,479.89	362.88	59.26	190.63

Table No. 33

MILEAGES OF COUNTY AND OTHER LOCAL ROADS

County road mileages include urban extensions in the county system.

Class of Roads and County	Total Mileage	Miles of Different Types of Improvement: Concrete and Bituminous Pavement	Rock Surfacing	Open for Travel But Not Surfaced
County Roads				
Baker	1,433	9	429	995
Benton	432	67	335	30
Clackamas	1,363	484	856	23
Clatsop	220	114	101	5
Columbia	490	170	306	14
Coos	576	60	436	80
Crook	688	18	135	535
Curry	178	1	172	5
Deschutes	1,321	130	53	1,138
Douglas	933	170	759	4
Gilliam	804	37	313	454
Grant	489	4	89	396
Harney	1,334	.....	134	1,200
Hood River	221	38	118	65
Jackson	940	240	518	182
Jefferson	755	8	454	293
Josephine	349	68	279	2
Klamath	793	214	328	251
Lake	1,550	8	265	1,277
Lane	1,396	271	1,021	104
Lincoln	442	21	133	288
Linn	1,108	219	873	16
Malheur	2,042	2	334	1,706
Marion	1,147	492	644	11
Morrow	1,220	51	434	735
Multnomah	675	602	57	16
Polk	500	76	414	10
Sherman	523	11	308	204
Tillamook	273	95	177	1
Umatilla	2,844	126	1,403	1,315
Union	576	29	252	295
Wallowa	802	8	310	484
Wasco	777	67	206	504
Washington	1,036	392	623	21
Wheeler	407	7	124	276
Yamhill	733	106	589	38
Totals, county roads	31,370	4,415	13,982	12,973
National forest roads	13,024	50	3,684	9,290
National park roads	199	73	6	120
Military reservation roads	22	18	4	.....
Indian reservation roads	1,295	27	83	1,185
Non-highway city streets	4,161	2,197	1,293	671
Totals, all roads other than state highways	50,071	6,780	19,052	24,239

Table No. 34

SPECIAL SERVICES COMPENSATION

Statement published in accordance with the requirements of ORS 291.570, showing payments for special services by the State Highway Department during the biennial period July 1, 1952 to June 30, 1954.

Name and Address	Nature of Service	Compensation
Abts, A. H., Hillsboro	Appraisal costs	$ 50.00
Allen, B. M. Gold Hill	Appraisal costs	50.00
Allen, Neil R., Grants Pass	Legal counsel	250.00
Allen Realty Co., Grants Pass	Appraisal costs	125.00
Allen, W. C., Grants Pass	Preparation for trial, witness fees and expenses	75.00
Allstate Construction Co., Portland	Estimates of moving costs	706.77
Ambler, D. B., Newport	Professional engineering	975.00
	Appraisal costs	150.00
Anderson, Harry H., La Grande	Preparation for trial, witness fees and expenses	184.30
	Appraisal costs	2,801.49
Anderson, Philo H., Baker	Preparation for trial, witness fees and expenses	55.55
	Appraisal costs	2,847.41
Andrews, F. H., Portland	Preparation for trial, witness fees and expenses	100.00
	Appraisal costs	850.00
Arestad Realty Co., Canby	Appraisal costs	50.00
Baldwin, Ewart M., Eugene	Geological study and witness fees	217.05
Barnes, C. A., Eugene	Preparation for trial, witness fees and expenses	238.20
	Appraisal costs	3,900.00
Barton, J. Tracy, The Dalles	Legal counsel	250.00
Baumbach, A. C., Sandy	Estimates of moving costs	503.25
Beaver Exchange Co., Bend	Estimates of moving costs	25.00
Bigley & Fiess, Inc., Eugene	Timber cruising, witness fees and expenses	1,265.70
Blackaby, Earl, Eugene	Appraisal costs	74.69
Blackburn, Jett, Burns	Appraisal costs	25.00
Boone, James R., Whittier, Calif.	Preparation for trial, witness fees and expenses	330.00
Booth & Kelly, The Dalles	Appraisal costs	50.00
Bowden, R. E., Gold Hill	Appraisal costs	100.00
Bowman, M. A., Merrill	Appraisal costs	60.00
Boyer, Walter, Bend	Appraisal costs	10.00
Bradley, Carroll F., Hillsboro	Legal counsel	100.00
Brayton, Wm. J., Florence	Timber cruising	190.00
Brent, Earl H., John Day	Appraisal costs	125.00
Brouhard, R. A., The Dalles	Preparation for trial, witness fees and expenses	53.00
	Appraisal costs	960.86
Brooke, R. A., Ontario	Appraisal costs	300.00
Brown & Brown, Portland	Timber cruising	56.21
Buckhorn-Cheatham, Portland	Legal counsel	90.00
Burt, C. B., Portland	Witness fees and expenses	25.00
Campbell, Merle G., Portland	Preparation for trial, witness fees and expenses	925.00
	Appraisal costs	2,120.00
Cascade Title Co., Eugene	Comparable sales data	225.00
Charlton Laboratories, Portland	Laboratory tests	453.80
Childs, Leo N., Salem	Appraisal costs	845.00
Chilcotte, E. M., Klamath Falls	Preparation for trial, witness fees and expenses	25.00
	Appraisal costs	120.00

Table No. 34—Continued

Name and Address	Nature of Service	Compensation
Church, Newberry & Roehr, Portland	Architect service for new office building	600.00
Clackamas County Branch Title & Trust Co., Oregon City	Comparable sales data	36.80
Clark & Groff, Engineer, Salem	Water analysis	63.00
Clark Realty, Oakridge	Appraisal costs	25.00
Coats, Edward C., Grants Pass	Preparation for trial, witness fees and expenses	75.00
	Appraisal costs	50.00
Cochran, George T., La Grande	Legal counsel	312.50
Coler, F. H., Klamath Falls	Witness fees and expenses	25.00
Commercial Abstract Co., Roseburg	Comparable sales data	197.00
Conner, Gilbert E., Coos Bay	Appraisal costs	520.66
Conrad, Earl P., Toledo	Legal counsel	625.00
Cook, Albert B., Bend	Appraisal costs	20.00
Coon & McEwen Realty, Baker	Appraisal costs	25.00
Coppock, Ross H., Salem	Preparation for trial, witness fees and expenses	200.00
	Appraisal costs	3,315.00
Cosovich, M. J., Astoria	Appraisal costs	59.55
Cowley, Budd, Tillamook	Appraisal costs	15.00
Crisse, W. F., Brookings	Appraisal costs	450.00
Crosby, Lloyd R., Portland	Timber cruising	25.00
Curl, C. C., Pendleton	Appraisal costs	125.00
Delano Aerial Surveys, Portland	Aerial photographs	250.00
Dennis, Everett, Klamath Falls	Witness fees and expenses	25.00
Dent Brothers, Salem	Estimates of moving costs	58.00
Diehl & Bumps, Forest Grove	Appraisal costs	67.50
Dimmick, George W., Roseburg	Appraisal costs	50.00
Lloyd E. Dinger Agency, Vale	Appraisal costs	50.00
Dryer, H. A. Company, Portland	Preparation for trial, witness fees and expenses	11,085.00
	Appraisal costs	30,315.00
Dudrey, J. A. (Jack), Bend	Appraisal costs	202.40
Dukek, George L., Fossil	Legal counsel	250.00
Emmons, C. S., Albany	Legal counsel	250.00
Estep, J. E., Lebanon	Witness fees and expenses	25.00
	Appraisal costs	75.00
Eugene Courtney Agency, The Dalles	Preparation for trial, witness fees and expenses	100.00
	Appraisal costs	467.75
Fallon, Wilbur J., Portland	Preparation for trial, witness fees and expenses	150.00
	Appraisal costs	587.50
Fauerso, C. P., The Dalles	Professional engineering	210.00
Don Fonda Agency, Ontario	Appraisal costs	22.00
Frolik, Robert, Salem	Appraisal costs	26.75
Fowler, Robert, Medford	Appraisal costs	390.00
Gendreau, Clifford, Oakville, Wn.	Witness fees and expenses	57.92
Gendreau, Florence, Oakville, Wn.	Witness fees and expenses	57.92
General Appraisal Co., Portland	Preparation for trial, witness fees and expenses	122.58
	Appraisal costs	2,125.61
Gilbertson, Gordon C., Tillamook	Witness fees and expenses	35.00
	Appraisal costs	40.00
Goldy, Mark A., Medford	Preparation for trial, witness fees and expenses	250.00
	Appraisal costs	2,415.00
Goodrich, Geo. R., Tillamook	Legal counsel	400.00
Gordon, Herbert, Oceanlake	Witness fees and expenses	25.00
	Appraisal costs	275.00

Table No. 34—Continued

Name and Address	Nature of Service	Compensation
Graham, Wm. L., Delake	Preparation for trial, witness fees and expenses	150.00
Wm. L. Gramham & Co., Delake	Appraisal costs	50.00
Grant County Service Bureau (G. L. Herberger), John Day	Preparation for trial, witness fees and expenses	50.00
	Appraisal costs	290.00
Griffith, E. A., Beaverton	Appraisal costs	1,395.82
Griffith & Meeke, Hillsboro	Preparation for trial, witness fees and expenses	85.00
	Appraisal costs	50.00
Grote, Leroy E., Redmond	Preparation for trial, witness fees and expenses	223.80
	Appraisal costs	159.50
Haggerty, H. E., Brookings	Appraisal costs	675.00
Hamlin & Shockley, Springfield	Appraisal costs	3,800.00
Hanners, D. A. (Commercial Bank), Hood River	Appraisal costs	65.00
Harmon Realty Co., Newberg	Preparation for trial, witness fees and expenses	20.00
Hayes, J. S., Bay City	Appraisal of damage to oyster beds	185.70
Hayter, Phillip, Dallas	Legal counsel	105.00
Heberling, W. A., Scappoose	Appraisal costs	1,505.00
Herman, Roy E., Corvallis	Appraisal costs	50.00
Herried, Donald E., Medford	Preparation for trial, witness fees and expenses	35.00
Hight, T. J., Gold Hill	Appraisal costs	50.00
Hilton, Harvey L., Eugene	Appraisal costs	390.00
Hoadley, H. W., Alhambra, Calif.	Appraisal of moving costs	205.00
Holbrook-Walstrom, Portland	Preparation for trial, witness fees and expenses	7,147.91
	Appraisal costs	14,565.03
Holman Transfer Co., Bend	Estimates of moving costs	115.00
Horn, Richard & Associates, Portland	Preparation for trial, witness fees and expenses	300.00
	Appraisal costs	305.00
Humphrey & Jones, Portland	Legal counsel	9,350.92
Ireland, Reade M., Oregon City	Appraisal costs	125.00
Jamison, G. N., Burns	Appraisal costs	25.00
Jones, Walter H., Medford	Preparation for trial, witness fees and expenses	100.00
	Appraisal costs	390.00
Kash Kash, Samuel, Pendleton	Indian interpreter	309.00
Kilgore, Claude, Salem	Auctioneer	4,963.05
	Appraisal costs	350.00
Kuratli, H. A., Hillsboro	Preparation for trial, witness fees and expenses	50.00
	Appraisal costs	250.00
Lacey, Harry A., Seattle, Wn.	Preparation for trial, expert witness fees and expenses	218.00
Landon & Patterson, Sweet Home	Appraisal costs	135.00
Lammers Moving Co., Eugene	Estimates of moving costs	50.00
Lane, A. J., Portland	Esimates of moving costs	75.00
Lehman, Ray L., Roseburg	Appraisal costs	50.00
Lennard, Thos. E., Portland	Preparation for trial, witness fees and expenses	375.00
	Appraisal costs	25.00
Lincoln Realtor, Portland	Preparation for trial, witness fees and expenses	200.00
Long, John K., Grants Pass	Assay of minerals	50.50

Table No. 34—Continued

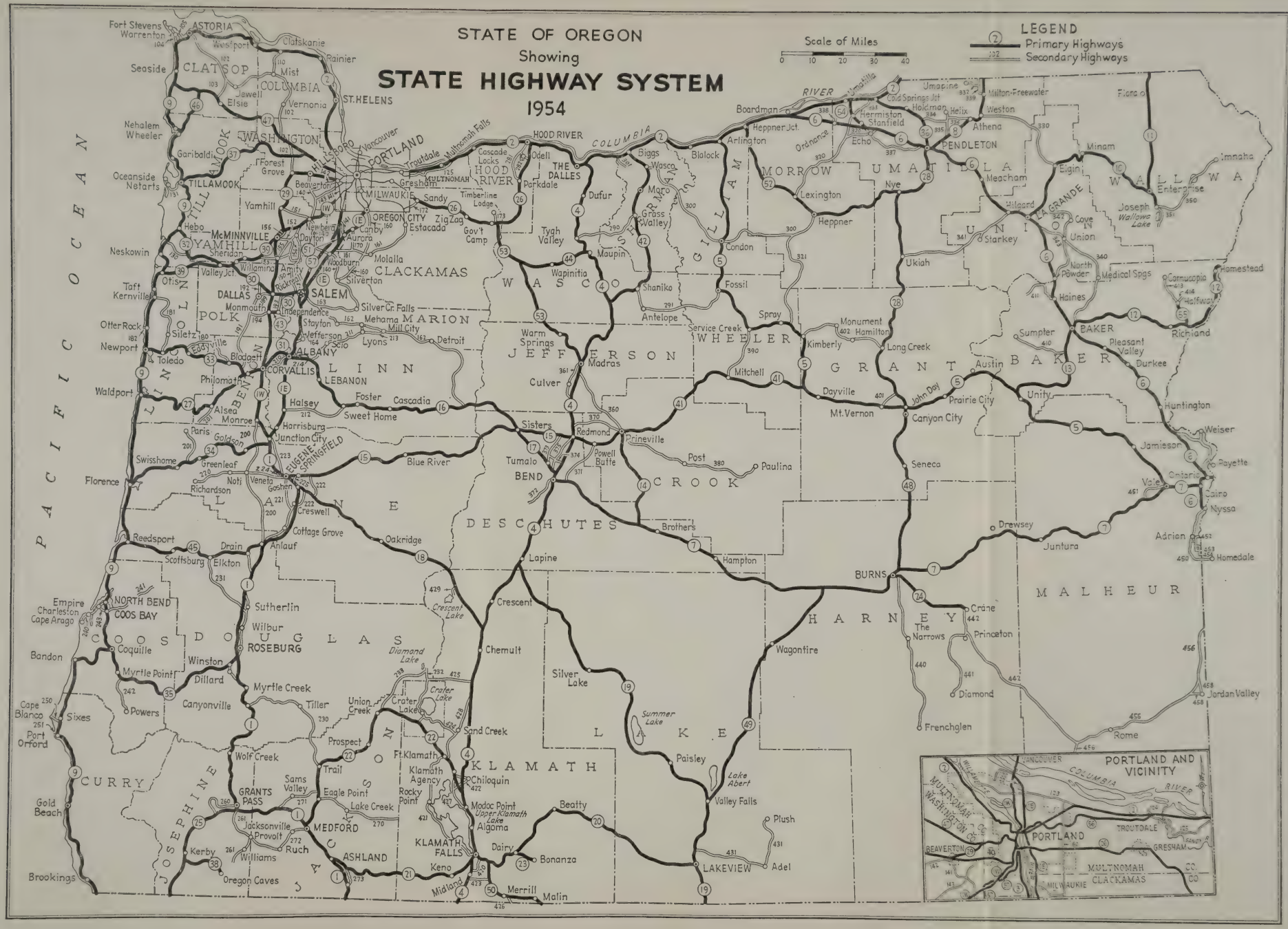
Name and Address	Nature of Service	Compensation
Long, Lynn M., Corvallis	Preparation for trial, witness fees and expenses	150.00
	Appraisal costs	250.00
Loud, William C., Eugene	Preparation for trial, witness fees and expenses	200.00
	Appraisal costs	385.00
Loughlin, Marvin C., Condon	Appraisal costs	25.00
Matson, J. A., Coos Bay	Timber cruising	88.04
McAllister, Duncan & Brophy, Medford	Legal counsel	1,251.50
McCarty, Dickinson & Swindells, Portland	Legal counsel	400.00
McGowan, Fred C., Portland	Preparation for trial, witness fees and expenses	112.50
	Appraisal costs	1,605.00
Marksbury, George, Cottage Grove	Appraisal costs	1,145.00
Mackin, J. Hoover, Seattle, Wn.	Geological survey and witness fees	273.00
Mengler, Richard, Corvallis	Legal counsel	875.00
Merrill, A. E., Coos Bay	Preparation for trial, witness fees and expenses	300.00
	Appraisal costs	781.60
Metzgus, Fred, Gold Beach	Timber cruising	35.00
	Appraisal costs	66.20
Meyer, Harold F., Forest Grove	Appraisal costs	557.50
Mills, Bert C., Portland	Preparation for trial, witness fees and expenses	100.00
Mitchell, Stanley J., Oregon City	Legal counsel	250.00
Mitchell, Walt F., Portland	Preparation for trial and expenses	230.50
	Appraisal costs	400.00
Monahan, T. J., Milton-Freewater	Legal counsel	154.08
Murphy, Claude H., Salem	Preparation for trial, witness fees and expenses	100.00
	Appraisal costs	2,145.00
Murphy & Kent, Salem	Appraisal costs	50.00
Myers, Chas. G., Tigard	Witness fees	7.50
Myers, Fred, Portland	Preparation of precipitation tabulation	12.00
National City Bank of New York, N. Y.	Bond handling charges	6,119.91
Nelson, Robert V., Salem	Preparation for trial, witness fees and expenses	75.00
	Appraisal costs	20.00
Olsen, Cliff, John Day	Legal counsel	250.00
Oros, Chas. N., Portland	Preparation for trial, witness fees and expenses	333.80
Parkinson, Keith, Redmond	Preparation for trial, witness fees and expenses	203.00
	Appraisal costs	152.50
Parker, A. K., La Grande	Appraisal costs	119.60
Patterson & Bush, Hillsboro	Legal counsel	450.00
Pittsburgh Testing Laboratory, Pennsylvania	Testing steel	1,108.88
Phipps, Charles, The Dalles	Legal counsel	322.50
Peoples, Don H., Bend	Appraisal costs	309.49
Potter, Claude A., Saginaw	Preparation for trial, witness fees and expenses	250.00
Rand, Irving, Portland	Legal counsel	775.00
Rann, Charlie, Portland	Preparation for trial, witness fees and expenses	75.00
Real Esate Exchange, Medford	Appraisal costs	70.00
Realty Auctioneering Co., Salem	Preparation for trial, witness fees and expenses	125.00
	Appraisal costs	75.00

Table No. 34—Continued

Name and Address	Nature of Service	Compensation
Reith, Carl F., Mercer Island, Wn.	Preparation for trial, witness fees and expenses	125.00
Reith, Floyd & Sons, Astoria	Appraisal costs	30.12
Rex Sound Co., Portland	Sound measurement	278.50
Richter, Ralph L., Roseburg	Preparation for trial, witness fees and expenses	150.00
Robbins, Stanley, Ogden, Utah	Preparation for trial, witness fees and expenses	150.00
Robertson, W. R., Eugene	Appraisal costs	240.00
Robertson, Wm. S., Grants Pass	Preparation for trial and expenses	75.00
Rodman & Urey, Eugene	Preparation for trial, witness fees and expenses	5,065.00
	Appraisal costs	25,067.91
Roseburg Realty & Insurance Co., Roseburg	Appraisal costs	1,125.00
Ross & Marks, Portland	Preparation for trial, witness fees and expenses	325.00
	Appraisal costs	1,025.00
Ruebel, Ray, Roseburg	Appraisal costs	50.00
Rufener, Q. L., Portland	Estimates of moving costs	25.00
Ruzek, C. V., Corvallis	Soil analysis and witness fees	146.85
Sassaman, Ray, Oakridge	Appraisal costs	25.00
Schumacher, Ray, Medford	Preparation for trial, witness fees and expenses	150.00
	Appraisal costs	950.00
Schwartz, Fred G., Medford	Preparation for trial	100.00
	Appraisal costs	265.00
Schwenn & Bring, Hillsboro	Legal counsel	500.00
Schee, Roy L., Prineville	Appraisal costs	15.00
Singleton, Harold, Portland	Consultant radio engineer	82.24
Singleton, H. C., Portland	Appraisal costs	110.25
Smith, Delazon C., Portland	Preparation for trial, witness fees and expenses	375.00
	Appraisal costs	635.00
Southern Oregon Title Co., Medford	Comparable sales data	10.00
St. John Motors, Portland	Estimates of moving costs	200.00
Stadter, Edward C., Salem	Legal counsel	520.00
Staples, Lloyd W., Eugene	Geological survey and erosion reports	696.91
Steele, Elmer T., St. Helens	Appraisal costs	280.00
Stotts, C. G., Coos Bay	Preparation for trial, witness fees and expenses	899.85
Stringer, Cortis D., Lebanon	Preparation for trial, witness fees and expenses	25.00
	Appraisal costs	75.00
Stotts, C. G., Coos Bay	Appraisal costs	1,127.95
Strong & Brewster, Portland	Preparation for trial, witness fees and expenses	100.00
	Appraisal costs	1,615.00
Swart, David C., Portland	Legal counsel	575.00
Tarem, Ardo, Salem	Russian interpreter	35.00
Teepe, A. G., Portland	Preparation for trial, witness fees and expenses	150.00
Thompson, David, Salem	Appraisal costs	117.00
Thornton & Johnson, Tillamook	Legal counsel	150.00
Tollefson, Roger, Toledo	Appraisal of damages to oyster beds	200.00
Toole, Nick, Ontario	Witness fees and expenses	18.96
U. S. Appraisal Co., Seattle, Wn.	Appraisal of structures and equipment	475.00
U. S. Appraisal Co., Portland	Appraisal costs	950.00

Table No. 34—Continued

Name and Address	Nature of Service	Compensation
Van Dyke & Dellenback, Medford	Legal counsel	250.00
Vinson, I. H., Salem	Timber cruising	79.93
Walker Real Estate, Gold Hill	Appraisal costs	50.00
Ward, G. H., Portland	Appraisal costs	25.00
Ward, G. N., Tillamook	Preparation for trial, witness fees and expenses	50.00
Walsh, Wm. E., Coos Bay	Legal counsel	2,586.56
Watson, Ralph, Portland	Public relations consultant	6,000.00
West, Tom H., Portland	Preparation for trial, witness fees and expenses	50.00
Western Ways, Inc., Corvallis	Aerial photographs	75.00
Wievesiek & Tripp, Oregon City	Preparation for trial, witness fees and expenses	250.00
	Appraisal costs	645.00
Early Wiley Agency, Roseburg	Appraisal costs	125.00
Wilhelm, Robert J., Portland	Preparation for trial, witness fees and expenses	125.00
Wilkes, Abstract Co., Hillsboro	Comparable sales data	15.00
Wilson, L. Earl, Brightwood	Preparation for trial, witness fees and expenses	125.00
Winfree, McCulloch, Shuler & Sayre, Portland	Legal counsel concerning bond issues	14,000.00
Woodward & Draper, Portland	Preparation for trial, witness fees and expenses	5,084.60
	Appraisal costs	10,395.09
Young, Roy O., Roseburg	Preparation for trial, witness fees and expenses	100.00
	Appraisal costs	1,045.00


STATE OF OREGON
Showing
STATE HIGHWAY SYSTEM
1954
Scale of Miles
0 10 20 30 40
LEGEND
Primary Highways
Secondary Highways
PACIFIC OCEAN
ASTORIA
CLATSOP
COLUMBIA
WASHINGTON
TILLAMOOK
CLACKAMAS
MULTNOMAH
HOOD RIVER
WASCO
SHERMAN
GILLIAM
MORROW
UMATILLA
UNION
WALLOWA
YAMHILL
POLK
MARION
JEFFERSON
WHEELER
GRANT
BAKER
LINCOLN
BENTON
LINN
CROOK
DESCHUTES
LANE
DOUGLAS
COOS
CURRY
JOSEPHINE
JACKSON
KLAMATH
LAKE
HARNEY
MALHEUR
PENDLETON
PORTLAND
SALEM
EUGENE-SPRINGFIELD
ALBANY
CORVALLIS
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